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POLICY.

Unless otherwise indicated, the views expressed in the original articles in this magazine are those of the individual authors and not necessarily precisely those of the Department of the Army or the U. S. Army Command and General Staff College.

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This copy is not for sale. It is intended for more than one reader.
PLEASE READ IT AND PASS IT ALONG

Mobile Strategy for the Missile Age

George Fielding Eliot

A more detailed analysis of the use and qualities of sea-based deterrent weapons systems and our present readiness to produce them is contained in Mr. Eliot's most recently published book Victory Without War, 1958-1961.—Editor.

THE strategic implications for the United States of the Soviet missile program are beginning to take shape.

The Soviets are building a powerful armament of long-range ballistic missiles, of which the intended targets are clearly the fixed airbases of our deterrent force—including such missile bases as we may construct. The Soviet objective likewise is clear—freedom of action to proceed with the piecemeal absorption into the Communist empire of Western Europe, the Middle East, and Africa, unhindered by fear of American nuclear retaliation. This objective may be sought through surprise destruction of our air and missile bases, or through exploitation of the capability of destroying them by surprise—to the end that we will be increasingly reluctant to use our retaliatory power or even to threaten its use. The terrific striking speed of the ballistic missile, with consequent reduction in warning time to a matter of minutes, is the basis of these calculations.

Aside from the technical difficulties of taking either defensive or retaliatory action within these exigent time limits, it may well be questioned whether the con-

ditions of a mutual missile confrontation with reaction intervals geared to 20 or 30 minutes of warning are compatible with the continued existence of a free society. The advantage in such circumstances would seem to be all with the side which can take its decisions in secret and execute them without premonitory symptoms, at its own carefully chosen moment. The paralyzant effect of this situation upon American initiative—to say nothing of its effect on the confidence of our allies and friends in the validity of our protection—need hardly be underlined.

The Real Danger

The difficulty is not merely a new Soviet means of delivering nuclear strikes against American bases at home and overseas. They have possessed such a capability for some time, and we have managed to live with it and retain the confidence of our associates in our ability to deter major Soviet aggression—because there was no way, while the piloted aircraft remained the sole delivery vehicle for nuclear weapons, that the Soviet Union could count on avoiding retaliation in kind. The menace of the ballistic missile lies solely in the fact that the Soviet leaders, so armed, may count on wiping out our ability to retaliate by surprise, leaving us helpless and suffering little harm themselves—at least no more than their defensive system could absorb.

The conclusion is obvious: What we require is not *more* nuclear firepower, but

Nuclear retaliation capabilities depend largely on existence of operating missile bases. Since fixed installations of this type are subject to destruction, thought must be given to developing mobile missile bases

enough nuclear firepower capable of reaching the Soviet Union from bases which cannot be destroyed by surprise. As against ballistic missiles, this means mobile bases, the location of which cannot be known in advance. The speed of the ballistic missile gives it its surprise capability; but it has another characteristic which points the way to the proper countermeasures—it must be preset to strike a fixed target, one which will not move while the guidance data is cranked into the missile and during the latter's time of flight. In the present and foreseeable state of the missile art, moving targets cannot be attacked successfully by ballistic missiles.

Sea-Based Deterrent

The logic of these facts, added to the logic of geography, leads the United States straight to the best available solution—a sea-based nuclear deterrent strategy. For such a strategy, fortunately, we have the necessary weapons systems in being or in advanced stages of development. We can attain the required level of deterrent capability in sea-mounted nuclear firepower before the Soviet missile program can have sufficient intercontinental delivery volume for the Kremlin to risk a showdown.

The potentialities of sea-based deterrence already are being recognized, as indicated by rising congressional excitement

over the *Polaris* intermediate range ballistic missile mounted in nuclear-powered submarines. The concept of sea-based deterrence is, however, far broadened in scope than the capabilities of a single weapons system, however potent. To be effective continuously, it requires control of the sea in the sense of being able to use the sea for our own purposes and to deny such use to any enemy.

Value of the System

The basis of such a system is the revolutionary fact—often overlooked among the other wonders of the current technological revolution—that sea-based weapons can, for the first time in history, exercise a direct and decisive influence in continental warfare. The immediate value to the United States of sea-based nuclear weapons lies in our relative readiness to produce and use them as a replacement, in whole or in part, for our present fixed-base deterrent forces, and the relative lack of readiness of the Soviets to produce effective countermeasures. The Soviet naval forces, composed of conventionally powered submarines, gun-armed cruisers and destroyers, and shore-based aircraft, are not well-suited to contest the control of the sea except in Soviet coastal waters and enclosed basins such as the Baltic and Black Seas.

Our sea forces, capable of operating aircraft and missiles (both atmospheric and ballistic) which can deliver nuclear weapons at ranges up to 1,500 or 2,000 miles, can strike all significant targets within the Soviet Union from unpredictable directions and with the full advantage of surprise. The volume of this delivery capability can be stepped up rapidly during the next two or three years; and the bases from which it is operated cannot be destroyed by surprise attack with ballistic missiles. They can, of course, be attacked and destroyed by other means; but location, identification, tracking, and attack upon such sea bases is a matter of the

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chances of war. There are too many imponderables for such chances to be brought within the limits of Soviet plans which require absolute insurance against nuclear retaliation.

Thus for the immediate future, our superior readiness to use and develop sea-based nuclear striking power gives us an offset to superior Soviet readiness to use and develop fixed-base ballistic missiles upon which the Kremlin has counted so heavily. The iron hand of our nuclear deterrent power then may continue to restrain the Soviets from outright aggression against us or our allies. The Kremlin will have its missiles, but will be unable to use them except at the price of national suicide. The cornerstone of our edifice of free world security will be the immunity from surprise destruction of our sea-based deterrent forces—an immunity based on their mobility and on our continued control of the seas where they are deployed.

Examine British Experience

Control of the sea, therefore, becomes in the future more than a phrase or a mere desirability. It becomes an essential of national self-preservation. So it was in times gone by to the British Empire, for quite different but no less exigent reasons. We will do well to examine the British experience, and the maxims of national policy which were developed from it, for we have much to learn from them.

The British sea-control system of the Victorian era was based on the fact that the British Isles, the life center of the Empire, were self-sufficient neither in food nor raw materials. The British people drew both their sustenance and their livelihood from the import of foodstuffs and raw materials, and the export of manufactured products. The task of British military policy was the protection of a vast worldwide network of seaborne trade, of which the British Isles were the focal point. The Empire included many overseas possessions of great value both as outlying

naval bases and for preferential commercial advantages. Only on the northwest frontier of India did the Empire have a land frontier requiring defense against a strong potential enemy. Elsewhere its overseas garrisons needed to be kept only at sufficient strength to deal with local disturbances, or to hold out against external attacks which could hardly, while the Royal Navy was superior at sea, have a more formidable character than raids. These considerations determined the character and strength of the British Defense Establishment.

The Navy was maintained at a level of fighting power (in capital ships) sufficient to equal any combination of potential hostile naval force in European waters, to control both home waters and the Mediterranean, and to concentrate in either to deal in timely fashion with hostile combinations. Outlying squadrons (of which that in the Far East was the largest) were kept to the minimum required for local defense of British interests.

Role of British Army

The Army was required to provide the overseas garrisons and the British component of the Anglo-Indian Army; at home, it provided a strategic reserve for Imperial emergencies and a mobilization base on which expansion could be organized in a major war. Long experience had taught the British people that the invasion of the British Isles by the numerically superior armies of continental enemies was not to be taken as a serious threat as long as their Navy controlled the waters over which the invaders must make their way. The home army, in a war of any magnitude, became a strategic instrument which, given command of the sea, could be used *offensively* under conditions of maximum advantage—as had been demonstrated by Wellington's Peninsular campaign and in the Crimean War. Command of the sea likewise enabled the assembling of forces from all parts of the Empire when neces-

sity arose, as was shown in the South African war. The Indian Army was so organized as to provide not only for the exterior defense and internal security of India, but also for a local Imperial reserve for emergencies in the entire Indian Ocean-Red Sea area.

A major function of the British Army was to ensure the freedom of action of the Navy and of the exercise of maritime power generally. Thus the garrisons of Gibraltar, Malta, Egypt, and Aden guarded the Mediterranean-Suez-Red Sea connection between the Atlantic and Indian Oceans; those of Hong Kong and Singapore watched respectively the northern and southern entrances of the South China Sea, the connecting link between the Indian and Pacific Oceans.

British Strategy

This system was based on the facts of geography and of the distribution of naval power throughout the world. As long as the only formidable non-British naval forces were those of the powers of continental Europe, the British Isles occupied a central position of commanding strategic advantage as between the forces of a Franco-Russian or German-Austrian-Italian naval alliance. Any hostile concentration either in the North Sea or the Mediterranean could be anticipated by the British Navy; any attempt to reinforce hostile fleets in distant waters could be met by a corresponding British movement without disturbing the British relative advantage in European seas. Freedom of movement and control of the shortest sea routes between the various oceanic areas were of the essence of this strategy.

It came to be an accepted axiom of British policy, instinctively supported by every British citizen, that the principal maritime defiles of the world—the narrow seas where land forces could interfere with freedom of maritime movement—must not be allowed to come under the control of a potential enemy.

Thus it was possible for Britons to sleep easily while the sea gates through the Indonesian Archipelago were controlled by the Dutch, or to accept—after some nervous quibbling—the idea of the Americans digging a canal through the Isthmus of Panama. But a German push into Morocco, flanking Gibraltar, or Russian pretensions in the Middle East, threatening Suez and the Levant Seas, were not to be endured even at the cost of war.

General public acceptance of this doctrine provided the necessary political support for an active policy to back it up. Examples can be multiplied: one must serve. In the middle of the 19th century, the British, allied with the French, fought a war with Russia the actual purpose of which was to destroy the Russian naval establishment in the Black Sea, based on Sevastopol, as well as to prevent the Russians from gaining control of the maritime exit of the Black Sea—the Turkish straits. This war started in 1854, the same year that Ferdinand de Lesseps began serious negotiations with the khedive of Egypt for the digging of the Suez Canal. To British strategists the idea of a Russian fleet lurking in the protected waters of the Black Sea, with free exit through the Dardanelles into the Mediterranean on the flank of the new "lifeline of the Empire," was unthinkable.

The British strategic system served Britain well during the 100 years following the Battle of Waterloo. It was not until it was challenged by the airplane, by rise of a distant seapower in the Pacific (Japan) outside the scope of British sea control, and by the expansion of German heavy industry which provided a more formidable European sea rival than any Britain had faced before, that Britain once more felt the pressure of danger.

Control of Sea Essential

The wheel has come full circle. The United States is today, in regard to the other great powers of the world, an insular

nation surrounded by salt water. American national security depends on control of these water surfaces as an area for the deployment of mobile deterrent weapons under conditions of relative invulnerability to surprise attack. While that control can be maintained, the defensive frontiers of the hostile Communist states are their shorelines; the sea beyond is the staging and concentration area of American mobile forces. This is a far less favorable situation for the Soviets than that of which they have so frequently complained, of being surrounded by a ring of fixed airbases, since after all they do possess the means of attacking these bases by land and air, whereas their means of attacking the mobile sea bases are limited and uncertain.

Again, as with Britain, we must base our control of the sea on the facts of geography. As with Britain, those facts are highly favorable to us if we exploit them. The Soviet Union comes down to the sea on four widely separated fronts: on the Arctic Ocean, the Baltic Sea, the Black Sea, and the Pacific Ocean. Soviet naval forces are divided among these four sea frontiers. The waters connecting them are not under Soviet control, except for the possibility of using the Stalin Canal to shift small naval units between the Baltic and the Arctic, or of using the difficult northern passage between the Arctic and the Pacific during a very brief portion of the year.

Basic Requirement

Our central requirement is the same as that of Britain in the 19th century—complete freedom of maritime movement for our own forces, and a capability of denying such movement if need be to any enemy.

Only by assuring ourselves such freedom of movement can we maintain the necessary deployments of mobile weapons systems to provide a continuous deterrent upon Soviet aggression. It follows that

we must be able to deny the enemy the capability of exercising surveillance over, or of interfering in any manner with, our sea-based task forces and detachments.

Hence, as did the British, we must come to regard as unendurable any vestige of Soviet or Communist control of land areas bordering on maritime defiles or inter-oceanic waterways; and we also must be vigilant at all the exits of enclosed waters bordered by Soviet territory. When our freedom of maritime movement becomes a condition of our national survival, Soviet intrigues in Egypt, for instance, become something more than an inconvenience, or a suitable subject for debate and decision by the General Assembly of the United Nations.

In such a strategy the part to be played by our Army must be closely analogous to that played by the British Army during the last century—to ensure worldwide freedom of movement for sea-based weapons systems and seaborne forces and supplies, by holding or taking land areas from which such movement can be supported or protected, and denying to the enemy the possession of areas from which it can be threatened.

Anticipated Conditions

The conditions under which these heavy responsibilities will have to be carried out may be anticipated as follows:

1. The USSR is deterred completely from launching a nuclear war or from actions involving a clear risk of nuclear retaliation by the existence of US sea-based mobile nuclear striking forces which are immune to surprise destruction.

2. The size of our deterrent force, because of its immunity to surprise destruction, does not have to be kept in any proportionate relationship to the size of the hostile offensive force. That is, its effectiveness does not depend on a margin of survival—on having a sufficient level of retaliatory capability left over after it has been attacked. It can be kept at a fairly

steady level based on the degree of damage to preselected Soviet targets which is considered to constitute a prohibitory risk in Soviet calculations. Once this level is attained, and subject, of course, to adjustments from time to time to meet new conditions, such a sea-based deterrent force can be maintained at considerably less annual expense than a force dependent on fixed bases of any kind. In consequence, a widening margin of resources will become available for military forces of other types, and for military aid to our allies.

3. Although deterred from risking nuclear war, the USSR will be determinedly pursuing policies designed to limit our freedom of movement, and these policies will have as their particular objectives the extension of Soviet influence, or the encouragement of "positive neutrality," in areas bordering on important maritime passageways—especially narrow defiles. This is the historic recourse of all land empires confronted by a seapower—the process of seeking "to conquer the sea by the land." Methods used may include subversion, sabotage, economic offensives, the use of satellite forces, the sending of arms and "volunteers" to assist Red-tinged or antiwestern governments or factions involved in civil strife or local conflicts, and the pursuit of political and propaganda activities designed to keep civil strife or local conflicts alive or to stir them up where they do not already exist.

Our reaction to such activities cannot, of course, always be "massive retaliation." The Soviets will seek to avoid clear-cut issues, to pursue—as Dr. Henry F. Kissinger has pointed out—"a strategy of ambiguity." This sort of thing sometimes has proved baffling to us in the past; but the political climate of a world in which the survival of freedom depends on US sea-based deterrent power and freedom of action to deploy it will be somewhat different than under the relatively immobile deterrent system heretofore in use.

A system based on worldwide maritime mobility must by its very nature be active, vigilant, and flexible. It fulfills the prediction of General Willard G. Wyman in the March issue of the *Military Review*—General Wyman foresees our future strategic concept as that of "a full scale of flexible and usable force for a flexible national strategy." Such a strategy cannot flourish unless supported by a flexible and dynamic policy supported by full, understanding public acceptance. An American policy of this kind cannot be created by persuasion, however eloquent; it must be the product of stern necessity, and it is for this reason that no sanction less than that of recognized self-preservation is likely to be its forcing-bed.

Policy Principles

What will such a policy, such a strategy, mean to the Army and require of the Army?

The answer to that question must be found in examining the principles of the *policy* which a flexible strategy must serve.

To recapitulate the facts from which the policy-principles are derived:

1. We have an effective nuclear deterrent.
2. It is based on freedom of maritime movement.
3. The Soviets are not, however, denied opportunities for interference with our freedom of movement which do not involve such an outright assault upon United States forces or allies as to call for nuclear retaliation.

These facts and their implications must be examined in relation to the climate of world opinion (or attitudes) which will be engendered by the central fact of our possession of a visible and clearly effective nuclear deterrent. The fear that any act of firmness on our part may unleash a nuclear war will begin to diminish. The impression which now poisons the whole atmosphere of the free world (including

its uncommitted membership) that the military balance of power is shifting in favor of the USSR likewise will be fading into less assertive colorations. As the decisive weight of our deterrent power is shifted into sea bases, some of our allies will feel a sensation of relief that they are no longer being asked to emplace retaliatory weapons in their homelands. In general, there will be a relaxation of tension among our friends, and a reexamination of prospects among governments and political leaders who have bet overheavily on Soviet support.

In this changing climate we may find it easier to do what might be very hard to do today and which yesterday we thought either impossible or undesirable—and that is to lay down our first principle for future free world security:

We shall not permit the USSR to transport, on or over the seas, arms and military supplies to be delivered to any other country or military personnel under any guise. We ourselves, however, reserve the right to send arms and military supplies to help friendly governments provide for their defense and internal security, and to use the seas and over-sea air spaces to transport our own military forces wherever our security or that of allied or friendly governments may require such movement.

The net effect of this principle may be summed up in very few words. We say to all concerned: Ivan is NOT coming—but if necessary the Yanks ARE coming.

This is a bold, even a ruthless policy. But it also is a necessary policy. The alternative is the continued slow erosion of the free and uncommitted portions of the world under various forms of Soviet pressures, and the constant confrontation of our diplomacy with those ambiguous alternatives with which we already are sadly familiar. Must we supply arms to so-and-so, who only wants to make trouble,

or see him get them from the Russians? Must we stand by and watch the Soviets stir up civil strife in this country, or a small war somewhere else, and profit by the result while we earn the hatred and contempt of both sides by ineffective wringing of hands?

Forms of Soviet Aggression

The free world faces two forms of danger from Soviet aggression. One is the outright nuclear assault directed against the bases of our retaliatory power with intent to extinguish that power and leave the Soviets masters of the world. This overriding danger we can counter by providing ourselves with mobile deterrents which cannot be destroyed by surprise. But the other danger remains. It is a danger which is felt by people in their persons, in their homelands, in their communities, and on their frontiers. It is the form of immediate and brutal danger to which the peoples of Greece, of Berlin, of Korea, and of Indochina have been exposed. It is the danger expressed in all its horror by the fate of Hungary. It is a danger which has its substance in direct Soviet interference in the affairs of other lands. Such interference rests in part on propaganda effects, based largely on fear, and in part on material Soviet actions, based largely on movement of persons, weapons, and supplies. If we reduce the fear by visible ability to maintain our power of retaliation, it makes little sense not to use the freedom of action essential to our mobile deterrent power to abate the lesser danger also.

This is more true since the proportions of our deterrent forces will be such, as above noted, that we can devote sufficient resources to other forms of military effort to make them fully effective. Security against local and limited aggression will demand, as it has in the past, the physical presence on the ground of armed forces sufficient to cope with the threat.

Requirement for Land Forces

In a world secured against Soviet aggression by mobile forces, the American requirements for land forces seem likely to bear a strong resemblance to those of Britain during the past century; fixed commitments for the defense of endangered frontiers, garrisons for key locations controlling maritime traffic (which today includes above-sea air traffic), and a strategic reserve at home provided with adequate means for its timely transportation anywhere that danger may arise. These all must be fully trained professional troops; behind them must be a mobilization base and reserve components with a degree of training adequate to the time limits of foreseeable requirements for their employment.

It is ideal to predict what changes may take place in our present commitment of troops to NATO for the defense of Western Europe, since this commitment will be affected by the progress of allied defense forces, by political changes (for instance, regarding such matters as German unity, the future of the satellites, and the Algerian rebellion), and by possible changes in the purposes and conduct of the Soviet Union.

Our other fixed frontier commitment, in Korea, bears a curious resemblance to the old British responsibility on the northwest frontier of India, where a proportion of British troops "stiffened" a much larger British-trained army of local soldiers.

Aside from these two major frontier deployments, we presently maintain garrison forces in the Panama Canal Zone, Alaska, and Okinawa, and a small defense force in Iceland. Beyond these we are engaged throughout much of the free world in training and organizing the military forces of other states by mutual agreement. Nowhere do we threaten the independence of any country, nor pursue an "imperial" or "colonial" type policy.

Unhappily, in many parts of the world

the prospect of the arrival of American help in time to intervene effectively to save the lives, the liberties, and the homes of people threatened by overt or covert Communist-inspired disorders must seem remote indeed. A policy designed to do just that, and directly associated with our prohibition on Soviet intervention, must have more visible and immediate military substance than we can provide now except in the immediate vicinity of our existing deployments.

Basic Military Requirements

Leaving aside the problem—which could be debated endlessly—as to whether we need additional overseas deployments, and where they should or could be located without creating more problems than they abated, the basic military requirements for the support of such a policy may be listed thus:

1. Complete freedom of movement—already demanded by our sea-based deterrent forces.

2. Airlift immediately available to move a division from the west coast (or Hawaii) to the southeast Asian area, and to move a division from the east coast to the Mediterranean-Middle East area.

3. Sealift immediately available to move an additional division in both oceans, and to catch up with air supply for the airlifted divisions within 30 days.

4. A system of airbases capable of providing terminal facilities for the airlifted divisions, and associated with storage, local transportation, and other logistic support facilities to allow prompt transfer of airlifted troops to any danger spot and their commitment to action under favorable tactical conditions.

5. On-the-spot Marine Corps forces afloat, at strengths not below regimental combat team level in the Mediterranean, and at either battalion or regimental level with a new naval task force to be kept continuously in the Indian Ocean area; these to be supported by Marine "ready"

forces on both our home sea-frontiers, as at present.

6. Army forces sufficient to provide for all fixed deployments, including garrisons (except insofar as the Marines may continue to be deployed on Okinawa), and to provide for a strategic reserve in the Continental United States of not less than a full field army of 12 divisions.

Other responsibilities of the Army—for example, participation in air defense, or training of National Guard and Reserve components—are outside the scope of this article. Tactical air support for all mobile Army and Marine forces is implicit in their readiness for action, and whether it is to be supplied by aircraft or missiles, or both, is a problem for the weapons specialists: in any case, it is indispensable, and in this discussion it is assumed that it will be available in requisite measure.

Similarly, the question of whether and to what extent so-called "tactical" nuclear weapons might be employed by such forces does not have to be dealt with here. They must be provided with and trained in the use of all weapons which they may require, in accordance with foreseeable needs. It may be useful, however, to reflect on the possible value, under easily imaginable circumstances, of nonlethal chemical weapons—when the need is to bring about a cessation of violence with a minimum of casualties. In many cases our purpose may be to stop misguided folk from doing damage to themselves or their neighbors with-

out raising up for ourselves a heritage of hatred based on memories of slaughter.

It is not contended that the forces and facilities listed here are sufficient to enable the United States to fight a continental war against the full manpower of the USSR or of Communist China. Such a war—if launched by the Communist states—properly would invoke nuclear reprisals. The purpose of the "ready forces" of the Army and Marine Corps must be to prevent extension of Communist control to any position threatening our maritime freedom of movement; to support allies or other friendly states in case of need; and by visible readiness to perform these missions—a readiness continuously made apparent by well-planned exercises in which allied forces might usefully be included from time to time—to deter the Communist states from undertaking enterprises of this character.

Conclusion

It is this author's conviction that the security of the United States, and of the free world, in the age of ballistic missiles in the hands of power-hungry dictators, lies in the creation and use of mobile instruments of power. If the creation of such instruments under the pressure of necessity is followed by the development of mobile habits of thought and a mobile policy accepted by all Americans as a requirement of survival, we may well have found a final answer to Communist ambitions for world mastery.

MOVING?

If you are moving, please notify the MILITARY REVIEW, Fort Leavenworth, Kansas, of your change of address. Be sure to include your name, *old* address, and *new* address.

A Fourth Service of Supply?

Colonel Frank A. Osmanski, *Artillery*
Student, Industrial College of the Armed Forces

THE antecedents of the current proposal that there should be a Fourth Service of Supply extend through at least the past 35 years.

During the quarter century between the passage of the National Defense Act of 1920 and that of the National Security Act of 1947, some 60 different congressional committees held hearings and consequently proposed legislation purporting to consolidate either the armed services themselves or one or more of their logistics functions. Featured in almost every one of these proposed bills was the consolidation of the military procurement function. Advocacy of this proposal became most intense during the years 1943-47, when an impressive array of Army generals wrote or testified in support of it.

First Hoover Commission

With the institution of the National Military Establishment by Public Law 253, 80th Congress, which rejected the concept of a separate supply service, this clamor subsided; in fact, it gave way to an opposite trend. The First Hoover Commission in 1948 strongly recommended against establishing in this country any semblance of the British Ministry of Supply. In 1949 the Joint Logistics Plans Group of the Joint Staff, having reviewed the history of the Fourth Service concept, unanimously agreed that it had been thoroughly studied and authoritatively re-

jected and that future resurrection of the idea would be fruitless and inadvisable. In short, there was general expectancy that unification of the armed services would ensure the necessary coordination of their logistics.

Second Hoover Commission

However, in 1955 the furor broke out anew. In its report on *Business Organization of the Department of Defense*, the Hook Committee of the Second Hoover Commission recommended the establishment of what it called the Federal Supply and Service Administration. This administration was to be a civilian-managed, civilian-manned separate logistics service within the Department of Defense that would procure for, and store and issue to, the armed services their common-use, commercial type items of supply and would furnish them certain common logistics services such as hospitalization. It would operate primarily in the Zone of Interior but might be extended in time to the overseas base areas.

The proposal set forth in this report was immediately introduced simultaneously in both Houses of the 84th Congress in bills sponsored by Senator McCarthy and Congresswoman Church. A cogent Department of Defense position in opposition to these bills was developed as a matter of urgency, largely on the basis of an Army study entitled *The Fourth Service and Al-*

Arguments for and against the establishment of a Fourth Service of Supply—as a means of producing additional effective support measures—again are being raised as this concept once more is considered

alternatives. The point was emphasized that other measures already were, or soon would be, in process which would accomplish the intent of the Fourth Service as effectively as proposed without attendant disruptiveness. These other measures included the Single Manager concept, the Inter-service Supply Support Agreement, and the "clearinghouse" process of interservice coordination whereby the armed services exchange information before any one of them procures or disposes of matériel.

Congress subsequently withheld enactment of the Hoover Commission recommendations into law and began observing closely the development and effectiveness of these other systems of logistics coordination and consolidation.

A new alarm was sounded in the summer of 1957 when Congressman O'Mahoney drafted into the 1958 Appropriations Bill a rider that would have given the President 180 days in effect to implement the Hook Committee recommendations. At the last moment this rider was deleted from the bill on the basis primarily that its provisions were unbecoming of appropriations legislation.

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Legislation Pending

At the present time, pending action by the Second Session of the 85th Congress, there are 18 bills, one in the Senate and 17 in the House of Representatives, all seeking the establishment of a Fourth Service of Supply. All 18 bills are identical in substance and resurrect, with minor modifications, the Hook Committee recommendations for a Federal Supply and Service Administration (which these bills call a department). The official positions of the Department of Defense and of its military departments, which again are unanimously and determinedly opposed to the proposal, are being formulated, solidified, and supported in detail in a series of comprehensive studies, one of which amplifies the earlier Army study of 1955.

What is behind this great controversy? The remainder of this discussion impartially will attempt to sift the deficiencies, real or alleged, which the proposed Fourth Service of Supply would seek to correct, dispose of certain basic misconceptions in the matter, outline the principal issues and arguments on which discussion is focused, and indicate the trends and prospects for future developments.

Criticisms of Present System

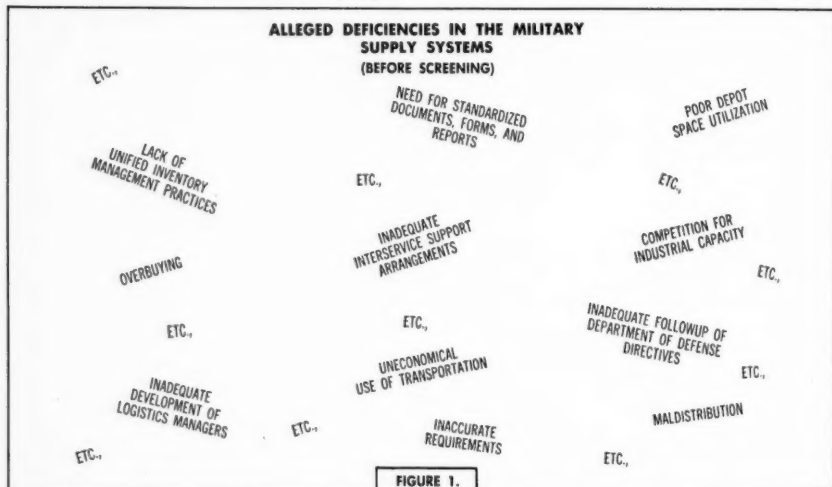
In the past two years the Congress has criticized the military supply systems on more than 90 different counts. The Second Hoover Commission Report indicated five broad areas of deficiency in military supply. If one screens these 95 alleged specific deficiencies (Figure 1) and eliminates those which are correctable only through better strategic planning, improved requirements determination, firmer coordination of the armed services by the Office of the Secretary of Defense, or other measures already in process, only three remain.

1. *Competition among the services for industrial capacity.*—The allegation here is that, if left to their own resources, the several armed services tend—in the cases of many important industries—to swamp

these with their separate requirements, so that over-all priorities are negated; whereas, if consolidated in one agency, the total volume of military procurement would be distributed, both seasonally and among producers, more nearly to match industrial capacities.

2. *Overbuying*.—There are two types of this—one, that in which procurement is done against requirements derived from strategic plans which are already invalid or are not yet effective, such as that high-volume buying which continued after the close of the Korean war or the buying of

these supplies in its depot for all services, a lower over-all stockage level and less depot space would be required. The other type of maldistribution is concerned with the uneconomical use of transportation between supplier and consumer. Here, the classical and often cited case is that of tomatoes in 1951. In that instance, the Army shipped a trainload of tomatoes from an east coast Army Depot to Army troops on the west coast at the same time that the Navy was shipping a trainload of tomatoes from a west coast Navy Depot to Navy forces on the east coast. When



Navy hamburgers and WAC clothing for the next mobilization. The second type which is more serious is occasioned by one service procuring supplies which another service at the same time has on hand in excess of its own requirements.

3. *Maldistribution*, again of two types.—One type is the inefficient use of depot storage space. This results from two or more services establishing approximately equal stock levels of the same or similar supplies in their own depots in the same general geographical area. The contention here was that if one agency were to stock

these facts came to light, it was of no avail to remonstrate that the lots of tomatoes in these two trains were of different grades.

Misconceptions

Before consideration is given to the issues in the controversy, certain misconceptions about the Fourth Service concept should be removed.

First, the concept of a Fourth Service of Supply, as proposed by the Army generals in 1943-47, by the Quartermaster General of the Marine Corps in 1951, and by the Second Hoover Commission in 1955,

is separate from, and only indirectly related to, the concept of a single general staff of the armed services, as proposed by the Navy General Board in 1941, in the "Collins Plan" of 1945, or by General Gavin in December 1957. Although both concepts have been embodied at times in the same over-all plan (for example, in the Collins Plan), it is practicable either to have a Fourth Service of Supply without a single general staff at Office of the Secretary of Defense (OSD) level or to have a single general staff without a consolidated logistics service.

Second, it has never been seriously advocated that the United States establish a counterpart of either the British Ministry of Supply or of the Canadian Department of Defense Production. These organizations are outside their respective defense department and primarily deal in the procurement of the munitions of war for their respective armed services. Conversely, current proposals for a United States Fourth Service of Supply would place it within the Department of Defense and concern it with matériel and supplies other than those peculiar to war.

Third, the Hook Committee argued that the trend in industry is toward the centralization of management functions, especially procurement, and implied that the military should follow suit. This claim is suspect. Two different surveys of industry were made in 1956, one by the Department of the Army of the country's 40 largest industrial corporations and the other on a broader base by the National Industrial Conference Board in response to an Army request. These surveys disclosed that, excepting for single-plant companies or those which procure essentially a single major raw material such as petroleum or rubber, industrial corporations are tending to decentralize procurement operations while still centralizing the making of procurement policy. Moreover, a review of current management literature

reveals that large corporations, in general, are tending to decentralize their management functions.

Fourth, the Hook Committee suggested that what the armed services need is a supply system operating "with the efficiency of a commercial enterprise," thereby implying that "business methods" are more efficient than military methods. This is debatable. The methods which are currently engaging the attention of business management are line and staff organization, operations research, statistical quality control, humane human relations, the five-step method of teaching the new employee his job, automatic data processing, long-range planning, wargaming (called "strategic decision making") and, of course, financial management. All these, except the last, had their origins in the military and the application of the last—financial management—to the military supply systems has not yet proved as beneficial as initial claims for it had promised.

Fifth, there should be classed as misconceptions those spontaneous arguments with which many military officers naturally react to any suggestion that there should be a separate supply service. There are three of these:

1. "The operational commander must control his logistics." Actually, no operational commander ever controls his logistics since logistics support is a matter of cooperation between commanders. Only at the level of a strategic commander, as will be discussed later, are the direction of operations and logistics brought together under the same commander.

2. "The chain of supply (extending from requirements, through production and procurement, distribution, storage and issue, to ultimate utilization, consumption, or disposal) is a continuum which should not be segmented." (Figure 2.) In reality, production was removed from this chain and given to industry during World War II. Procurement frequently is assigned to one

service for all four (four, including the Marine Corps); and industry often performs storage for the armed services. In fact, the chain can be, and is repeatedly, broken into as many as six different segments, provided only that two inviolate couples are retained: utilization or consumption together with the determination of gross requirements, and the determination of net requirements together with the direction of distribution. (Figure 3.)

3. "If set up in their own organization, logisticians tend to become self-centered and unrealistic." This is an argument more of feelings than of facts and one in which there is an abundance of evidence to the

Those proposing the separate Fourth Service of Supply say, in effect: "Let's start afresh with a brand-new logistics organization, free of the constraints of tradition and habit, which will be efficient from the start." Those opposed point to the supply systems in being and the other measures in process and say: "These going concerns already are effective. If improvements are required, these existing systems are capable of making or absorbing them without over-all disruption. In any case, we should not 'change horses in midstream,' for truly we are already at war—cold war." Then, too, is it really desired that the Army Quartermaster Corps

THE CHAIN OF SUPPLY
(AS A CONTINUUM)

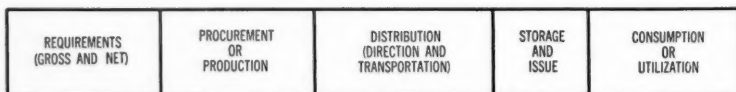


FIGURE 2.

contrary. Moreover, in any sound proposal for a Fourth Service there would of necessity be provisions, expressed or understood, for close interchanges between the logisticians and the operational commanders.

Principal Issues

In the Fourth Service of Supply controversy there are six principal issues:

1. Revolution versus evolution.
2. Consolidation versus bigness.
3. Integration versus multiplication.
4. Civilian personnel versus military units.
5. Savings versus costs.
6. Economy versus effectiveness.

The arguments, pro and con, with respect to these issues are set forth in the following discussion.

and the Army Medical Service and a large portion of the Navy's Bureau of Supplies and Accounts be disestablished, as would result substantially from implementing the Hoover Commission recommendations?

Consolidation or Unmanageability?

The advocates of a Fourth Service urge consolidation of common supply functions, claiming equal or better effectiveness with increased economy. Those opposed warn of the unmanageability of so vast a business. The procurement of common-use, commercial type supplies alone currently is at three billion dollars a year—in itself a business equal to the annual sales of Sears, Roebuck & Company. If storage and distribution are added to this procurement, or even worse if common-use sup-

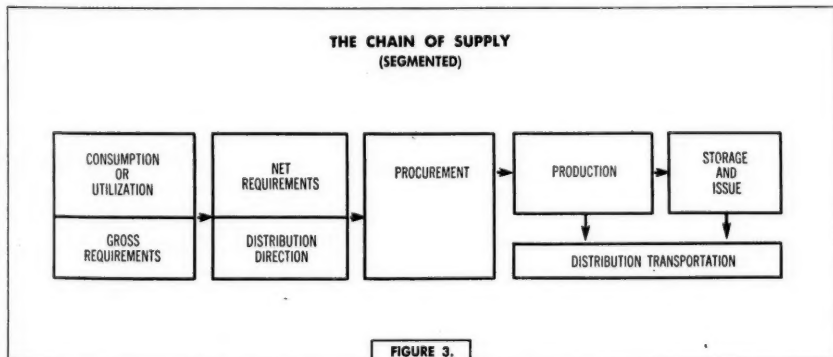
plies other than commercial type also are included (which is the logical next step beyond the Hoover Commission recommendation), doesn't it all become too vast an enterprise to manage well? Moreover, if facilities such as depots are consolidated, doesn't this make them more vulnerable to enemy attack?

Integration or Multiplicity?

The Fourth Service is proposed as an integrated supply system, one supply system for all the Armed Forces. However, if each service retains—as it would have to—a residual supply system for its noncommercial type and peculiar items of maté-

better managers than the military, give permanence and depth to their jobs, and are more easily expandable in wartime since no elaborate mobilization process is required.

Those opposed to the proposal point out that there are not enough qualified civilian managers in civil service today with whom to staff an organization of the size of the proposed administration. In addition, are not civilians the very ones who, in peacetime or wartime, are more easily tempted by the blandishments of industry to leave their jobs in the Government? How can civilians more easily expand in wartime if selective service is to be effective,



riel, and if each service must continue to train supply units for handling even its commercial type supplies in the combat zones overseas, is not the result of creating a Federal Supply and Service Administration really multiplication of the present supply systems, adding another to a continuing four?

Civilian Management

The Hook Committee recommended that the Federal Supply and Service Administration should be "civilian-managed and civilian-manned" following a transition period during which large numbers of military officers would establish the new administration. It implied that civilians are

favoring as it must the military at the expense of individual civilian desires? Furthermore, if the Fourth Service of Supply is to be extended to overseas bases, what is to keep civilians at their jobs there under the threat of nuclear attack? Why is to protect them and their installations, and what would their status be if they are captured by the enemy?

The Hoover Commission claimed that great savings would result from the establishment of the Federal Supply and Service Administration. However, the Hook Committee Report is vague in its outlines of the organization and procedures for the new agency, so that an estimate of the costs of establishing and operating it is

difficult to make. Nevertheless, such cost estimates as have been made indicate that establishing and operating the new agency would be expensive and give no evidence that there would be any substantial savings as a result.

Organization

Finally, there is the question as to what, after all, really is being sought—a peacetime business organization which might be economical in managing public funds or a wartime logistics organization which would be effective in supporting the combat forces in operations? In this regard there is a significant pair of sentences in the covering letter by which Mr. Hook transmitted his Committee Report to the central Second Hoover Commission, in which a subtle contradiction epitomizes the issue:

An examination of the basic organization for conducting military operations was beyond our assigned mission, and this report contains no comment on that subject. The basic military structure is, however, inseparably interwoven with the business management and support structure.

In other words, although the Hook Committee acknowledged the importance of the organization of the armed services for war, it did not consider such organization in formulating its recommendations.

Current Trends

There are trends in process, any one of which, if it eventuates, would evolve its own brand of a Fourth Service of Supply.

First, there is increasingly intense external pressure for the implementation of the Hoover Commission recommendation. Not only are there 18 bills before the current Congress, aiming at a Federal Supply and Service Department, but there also are several private committees actively lobbying for such legislation. A residual element of the Second Hoover Commission continues to operate from an office in the District of Columbia. The Citizens Committee for the Hoover Report is campaigning in its behalf. Last year the

United States Chamber of Commerce gained entrance into the appropriations bill hearings expressly to champion the fourth service concept. Moreover, various authors and lecturers outside the military bespeak its support. If such pressures are successful, the "civilian-managed, civilian-manned, common-use, commercial type" separate supply service will emerge. However, the Department of Defense studies opposing this concept are cogent and circumspect analyses, the arguments in which should prevail against these external pressures.

Second, when the Single Manager concept was developed in 1955, in effect to forestall the establishment of a Fourth Service, three safeguards were built into it in order to preclude its becoming a Fourth Service in itself. These safeguards now are being compromised.

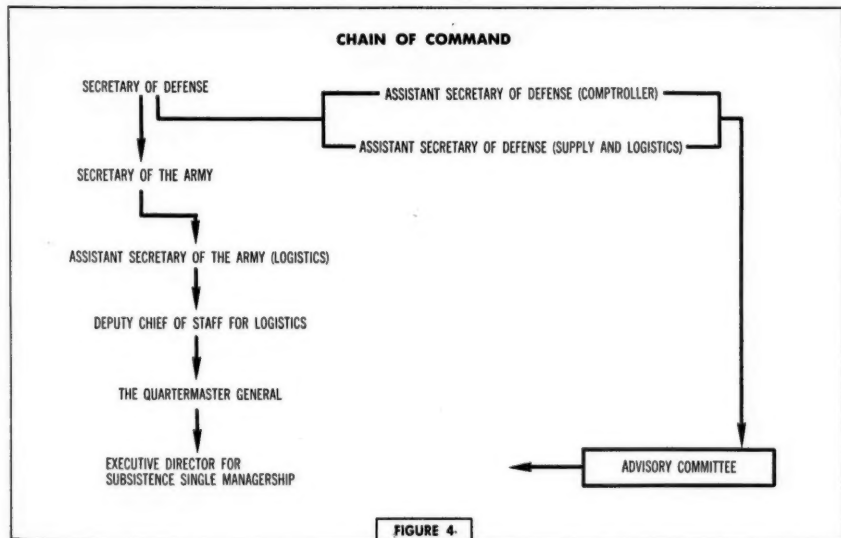
Safeguards

Each Single Manager Agency was to be deeply imbedded within the existing chain of command of a military department so that any attempt to extract it later would be disruptive of its operations and, in any event, would be difficult. For example, the Military Supply Agencies (as these single managerships are called) for Subsistence and for Clothing and Textiles, assigned to the Army with the Secretary of the Army as Single Manager, are implanted some five echelons beneath the Secretary of Defense. In a sense this safeguard was weakened from the beginning by the insistence of the Secretary of Defense that the executive director of the agency, who is its actual operating head, should be advised by an administration committee in which two direct representatives of the Secretary of Defense are included. This provision extended the Office of the Secretary of Defense directly into the operations of the agencies. (Figure 4.) However, the real danger of uprooting lies in certain current proposals which would elevate these agencies to positions imme-

diately under the respective Assistant Secretaries for Matériel (the Assistant Secretary of the Army for Logistics, in the case of the Army), thereby reducing by three levels the depth of their imbedment in the chain of command.

The other two safeguards were first, that each Single Manager Agency was to be assigned functions peculiar to its own nature. For example, the Military Subsistence Supply Agency has had a research and development function from the start, whereas, the other agencies have not; and

Finally, there is the possibility that the Single Manager Agencies might all be consolidated into a centralized supply agency, into which might even be incorporated some of the current logistics functions of OSD such as standardization and cataloging. Such an agency most likely would be directly administered by OSD but not have a separate departmental status. If such a possibility were to eventuate—and the trend indicated above with respect to the standardization of the Single Manager Agencies already predisposes them to such



the Military Petroleum Supply Agency has had no storage function, whereas, the other agencies have. Second, each agency was to be permitted to develop its own peculiar procedures. Together, these safeguards were to ensure that the several Single Manager Agencies all developed differently, so that consolidation of them would not be readily practicable. However, recent directives of OSD tend to standardize the functions and procedures of all Single Manager Agencies, thereby predisposing them for easy amalgamation.

easy consolidation—a hybrid Fourth Service would emerge, drawing its personnel from the present military departments but nonetheless beyond their direct control.

Impact of Strategy

The foregoing trends are developments in management. The third trend which could lead into a Fourth Service of Supply is a series of developments in strategy which have originated in the overseas unified commands since World War II. They are self-evident and valid to the extent

that they are termed axioms of modern strategy here. They are:

1. *Modern wars are fought by joint forces operating under unified command.*—From the national viewpoint this means that the strategists of modern war are the unified commanders and not an agency below them and probably at most only one agency above them.

2. *Strategy must be projected and supported from a firm base.*—This is an old precept which now has acquired new meaning. Whereas, in World War II a firm base meant a permanent, well-protected base (such as USA, United Kingdom, or Hawaii), today, in the time of the threat of nuclear attack it means multiple, even mobile, bases. From these bases flexible support is available, and the remaining resources of the bases are known intimately at all times to the strategic commander who is able to redirect the use of them as required for the support of his theater of strategy.

3. *Strategic logistics (that is, the development and use of logistics bases) emerged in World War II as the complement of strategy; today, strategic logistics is a component of strategy.*—Although in World War II it was sufficient that the strategic commander could, by directing the operational forces under his command, be satisfied that logistics support would follow along in a coordinated manner, today, this is not adequate. The modern strategic commander (that is, the unified commander overseas) now must control directly not only his land, naval, and air forces, but also the total logistics resources in his theater including an organization for handling such resources. It is not sufficient under nuclear attack—when bases and resources will disappear suddenly—that the unified commander coordinate the use of the remaining resources in his theater by having to deal with three different logisticians (theater Army, theater Navy, and theater Air Force), each

two echelons removed from him; or even to count on three service commanders to deal with and coordinate these logisticians.

Interservice Supply Support Agreements provide an agreeable basis for developing a joint logistics plan for the support of theater strategy in peacetime. However, it cannot be hoped that in wartime these agreements, often running in volume into catalog-like compendiums, effectively could govern the rapid redirection of logistics support arrangements that nuclear war would entail. Since September 1956 the unified commanders have had directive authority in the field of logistics which enables them to decide in peacetime logistics assignments for peace and war. In wartime even more authority will have to be given these unified commanders in order that they may reallocate, as required by the current strategic situation, all logistics resources in their theaters.

There is a reasonable interpretation which infers that this wartime function is implicit in the authority now given the unified commanders, so that in emergency they might pool logistics resources and deal directly with the logistics commanders of their theaters. Even then, dealing directly with three logisticians will prove cumbersome and it can be anticipated that unified commanders will tend to demand a Single Manager of their logistics resources. If this trend eventuates, a Fourth Service will be engendered that will be *military* in nature and will deal in all logistics, and its emergence in the unified commands will require its complementary establishment in the United States as well.

Conclusion

These, then, are the basic allegations and facts, the misconceptions, the issues and arguments, and the trends and prospects in the coming controversy over a separate Fourth Service of Supply. The progress of this controversy in the coming year should be both interesting and fateful.

THE THEORY AND PRACTICE OF COMMUNISM

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THE supranational concept called communism presents a greater threat to civilization than any since the Mongol hordes of Genghis Khan. It was only ignorance and indifference on the part of the Mongols that saved Europe in the 13th century. Neither ignorance nor indifference will save the free world today. It is the idea behind communism that makes it a worldwide force that enlists in its service men and women of every walk of life in every country.

If we are to understand communism and its influence throughout the world, if we are to grasp the essence of the problems of war and peace today, if we are to comprehend the reasons for the character of our own national security program, we must have an understanding of communism as a theory and practice of revolution.

The Founders

In 1848 a remarkable little book was published in London. The authors of the book were two men named Karl Marx and Friedrich Engels. Entitled *The Communist Manifesto*, that little book is the prayer book of communism. It begins with the words: "A spectre is haunting Europe—the spectre of communism" and it ends with the words: "Let the ruling classes tremble at a Communist revolution. The proletarians have nothing to lose but their chains. They have a world to win. Workingmen of all countries, unite!" Between those words is a concise statement of the

views and aims of the Communists. In all respects, those views and aims are the same today as in 1848.

The Theory

If Marx's *Manifesto* is the prayer book of communism, then his *Das Kapital* is its Old Testament. In this latter book, Marx's ideas are set down in great detail and constitute the basis of contemporary Communist doctrine. His tenets divided into three main parts are:

1. His materialistic theory of history, or explanation of social evolution.
 2. His explanation of the workings of capitalism, or economic theory.
 3. His theory of politics or government.
- Lenin, Stalin, and many others have written in amplification of Marx's ideas, but the three main theses above still are basic Communist belief.

Materialistic Theory of History

Materialistic theory is an economic interpretation of history. It says that the way in which men earn their daily bread is basic to everything they do; that is, at any given time, the prevailing mode of production dominates the whole of society. Thus, Marx said, in our times, capitalism, the economic system under which the means of production are privately owned and operated for profit, is the prevailing mode of production. Law, politics, religion, art, philosophy, and science are formed by and express the needs and aspirations of

The theory and practices of communism are irrefutable proof that the Soviet objective is a Communist world. Soviet security, however, never will be a reality until the American way of life ceases to exist

the capitalists or the "bourgeois" as he called them. Now, as for the cause for social change. New methods of production appear and develop. These new methods do not harmonize with the old economic system. The result is a struggle between the class of people whose state is in the old system and the working class whose interest lies in furthering the development of new methods. This class struggle goes on, and out of it emerges a new economic and social organization more compatible with the new methods of production. Marx and his followers tie this philosophy to all of human history, past and present.

Marx's View of Capitalism

The central thesis of Marx's economic teachings is that capitalist society is hopelessly torn by antagonistic forces which ultimately will destroy the entire social fabric, but in such a way that the Communist embryo preformed in capitalist society will be set free. Human labor, said Marx, is the basic factor in the production of goods. Capital—that is, machines, raw materials, and factory buildings—is only previous human labor not consumed but used in the process of production. Interest on capital, rents paid for land, and

the enterpriser's profit all come out of the surplus value created by laborers.

The creation of that surplus value is explained as follows. The take-home value of a day's labor equals only the amount of labor required to maintain the worker and his family on the subsistence level. Within a day's work under the capitalist system, however, the worker produces more than the necessities of his minimum existence. The rest of his work constitutes surplus value, which accrues to the capitalist—the bourgeois—not the worker. The workers, therefore, are ethically free in the sense that they are free to make contracts to sell their labor, free of all possessions other than their working energy (and free, apparently, from all responsibility, either for themselves or for social progress).

As the efficiency of the machine increases, the workers produce an industrial reserve army composed of the growing number of unemployed whose competition keeps wages always at the lowest possible level and makes it necessary for the worker to contribute further to the surplus values. This theory of surplus value leads to the theory of concentration, according to which capitalist enterprises tend to grow continuously by the extermination of the smaller establishments. In the course of evolution, all production will be concentrated in a few colossal enterprises. Remember, this is still Marx talking.

This inevitable development of capitalism leads to increasing poverty, oppression, enslavement, degeneration, and exploitation of the swelling masses of labor. The growing production and the accumulating misery of the masses, combined with the anarchy of the capitalist system under which every capitalist produces at random, lead to more and more devastating economic crises. Marx was convinced that the world revolution was imminent, that one of these sharp crises would be the turning point at which, as he said, "the

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knell of capitalistic private property sounds. The expropriators are expropriated." The capitalist shell bursts asunder, and the Communist embryo comes to life with the violent birth pangs of the social revolution.

Theory of Politics

The political viewpoint of Marxism follows from its philosophic and economic premises. The modern state is "nothing more than a committee for the administration of the consolidated affairs of the bourgeois class as a whole." The state and government thus are simply "instruments of class exploitation." For Marx, the state is personified by the policeman. But "the existence of classes," said Marx, "has not only ceased to be a necessity, it becomes a positive fetter on production. Hence these classes must fall as inevitably as they once arose. The state must irrevocably fall with them." In other words, government is needed simply to maintain the dominance of one class over another. With the extinction of class differences under communism, there will be no need for such dominance, and, therefore, the state will "wither away"—will become extinct. But neither Marx nor his Soviet disciples have ever indicated precisely when the state apparatus will cease to exist.

What did Marx say the new Communist world would look like? Fortunately, for his political heirs, he did not say. But from a few scattered remarks it is clear that he expected it to be a paradise on earth. He believed not only that the state and classes as we know them would disappear, but also the difference between manual and intellectual labor and the gulf between town and country would disappear. The parliamentary system would be replaced by the occupational representation of the workers (Soviets). The main feature of the new society would be a colossal abundance of production on the basis of an all-embracing planned economy. Men would produce according to their

abilities, and receive according to their needs.

Extensions of the Theory

According to the Communists, the writings of Lenin and Stalin essentially are a further development of Marx's theories. Their writings may be called the New Testament of the Communists. These extreme left-wing disciples of Marx insisted on the necessity for the complete destruction of the capitalist states. They advocated mass insurrection and class terrorism; they further developed the Marxian idea of the dictatorship of the proletariat; and they stressed the necessity of an indefinite transitional period between capitalism and communism through state socialism. Until the appropriate conditions for the establishment of a stateless society have been realized, the state will not diminish its power, but on the contrary will intensify it.

Only through vigorous dictatorial power under the militant leadership of the Communist Party can the enemies of the proletariat be crushed, the structures of Communist production be established, and peoples become accustomed "to observing the elementary conditions of social existence without force and without subjection." There must be a system of compulsory and universal state education oriented, of course, toward Communist ideas. Religion must be destroyed through force and mass propaganda, along with the social conditions that promote its insidious influence upon the masses.

Another political idea developed by Lenin is his theory of imperialism. For him, economic imperialism is the ultimate stage in the historical development of capitalism. At this phase, said Lenin, wealth will be concentrated in the hands of a relatively few "monopoly capitalists" (trusts, syndicates, and gigantic banks). The world will have been divided into colonial spheres of influence and the native peoples of the backward areas ex-

plotted by these monopolists. This will result in rising costs of living, racial oppression, and intensification of the class struggle. Competition for increasing the size of their colonial empires inevitably will bring these supercapitalists to great wars between themselves. After they have thoroughly weakened each other, said Lenin, the "monopoly imperialists" will fall easy prey to Communist revolutions and capitalism eventually will be destroyed completely as an economic and political system since it inherently contains the seeds of its own decay.

Lenin also expounded a theory on the technique of retreat—a technique employed expertly and frequently by the Soviet Union in the conduct of her foreign policy. In essence, it is epitomized by the expression, "One step backward, two steps forward." Lenin, on that subject, says, "To wage a war for the overthrow of the international bourgeois, a war which is a hundred times more difficult or prolonged or complicated than the most bloodthirsty of wars between states, while renouncing beforehand the use of maneuvering, of playing off (although for a time only) the interests of one foe against the other, of entering upon agreements and effecting compromises (even though these may be of unstable and temporary character), would not such renunciation be the height of folly?"

We all have observed this series of great zigzag shifts in their policies—one day they threaten; the next they offer coexistence. The Communists seldom butt their heads against a stone wall. On the other hand, they flow with rapid ease into any vacuum created, particularly where the lack of order and organization and low standards of living have provided the opportunity, such as followed World War II. Such vacuums invite the seeking of social objectives by means of well-organized and skillfully executed propaganda campaigns directed toward class antago-

nism. This, in turn, well may be followed by a limited drive for some political power. And when political power is consolidated sufficiently, economic changes may be the next in order. On the other hand, the meeting of opposition in any of these fields may cause a temporary reversal toward propaganda and infiltration techniques again.

The Party

The framework upon which all Communist tactics are developed is the Communist Party organization. The broad foundation of the Party always lies in the system of cells or primary Party organs which are set up within trade unions, communities, political organizations, educational institutions, and professional societies, in fact, wherever three Party members may meet and carry out the Party orders. These are subordinated to higher committees and the latter, in turn, to still higher councils organized frequently along geographical lines although sometimes built up on an occupational basis. At the top normally is found a central committee possessing dictatorial executive, legislative, and judicial power.

In shape, then, the pyramid of the Party hierarchy resembles the organization of any other political party, but there the resemblance ends. In the conventional political party the broad base of members or voters elect their representatives to regional, state, or national committees to speak for them in the high councils of the party. The reverse is true in the Communist Party. There the "word" travels from the top downward and ratification and unequivocal obedience rather than representation are the order of the day. In Soviet jargon this phenomena is called "Democratic Centralism."

In the United States, as elsewhere, the work of these Party members, cells, and committees is in the true sense conspiratorial. From the Communist point of view, legal work always is secondary. It is but

a cover for illegal activities. "Legal work," Lenin declared, "must be combined with illegal work. The party which does not carry on systematic, all-sided illegal work in spite of the laws of the *bourgeoisie* and the bourgeois parliament is a party of traitors and scoundrels." The Communist movement is like an iceberg—most of it is hidden beneath the surface. Conspiracy is so much a part of the essence of communism that it persists unchanged even in those dominated satellite areas where it is politically supreme.

The Individual

The true Communist is a "dedicated man." He has no life apart from his organization and his rigidly systematic ideas. Everything that he does, everything that he has, family, job, money, belief, friends, talents, life, is subordinated to his unswerving devotion to communism. He is not a Communist just on election day or at Party headquarters. He is a Communist always. For him, the world is divided into just two classes of human beings: the Communists and all the rest.

In one important sense, Marxism is a religion. It purports to answer all questions with equal certainty. To the true believer it presents, first, a system of ultimate ends—ends that embody the meaning of life and are absolute standards by which to judge events and actions. Second, it is a guide to those ends, a plan for the salvation of mankind, or more specifically of a chosen section of mankind—the proletariat. It is one of that group of religions which promise paradise on this side of the grave.

This pseudoreligious quality of Marxism also explains the typical attitude of the orthodox Communist toward opponents. To him, as to any fanatic believer in a blind faith, the opponent is not merely in error, but in mortal sin. Dissent is disapproved, not only intellectually, but also morally. There can be no excuse for it, once the message has been revealed. "De-

viationism" is a violation of the doctrine of the infallibility of the Communist messiahs.

Communism in the USSR

Stalin liked to refer to Russia as "the Socialist Fatherland." By this, he meant that the Soviet Union as the first large state to practice communism, was and is the spiritual and temporal Mecca to which all Marxists, regardless of nationality, owe fealty and allegiance. It is ironic to note that Marx visualized that a modern, highly industrialized society was the most appropriate breeding ground for the birth of a Communist state. In contrast, Lenin and his cohorts, with an invaluable assist from the German High Command, seized the opportunity, after the overthrow of czarism, to implant the seeds of bolshevism in the backward, agricultural Russian nation. The objective now is to examine "the Socialist Fatherland"—the application of Marxian-Leninist theory to a specific political entity—the USSR.

Consider some of the salient characteristics of Soviet society. To begin with, the Soviet system essentially is *conspiratorial*. Conceived in the conspiracy of revolution, the regime remains a vast conspiracy both internally and externally. This is made evident by the covert struggles going on constantly within the Kremlin for leadership of the Party and the unremitting efforts of the Soviets to deceive and confuse the masses as to conditions in the outside world. Externally, the Soviets expand through subversion and infiltration. Second, Soviet communism, having begun as a minority movement, remains today largely a *minority movement*. Lenin perpetrated the Bolshevik revolution with but a few thousand followers; the Party in Russia today has only about six million members in a population of approximately 200 million.

The leadership of the Party frequently is culled through periodic mass purges to restrict the number of "insiders" and to

maintain the totalitarian dictatorship over the "outsiders"—the mass of the Russian people. Communism is a *total philosophy*. It demands and takes over all the political, economic, military, cultural, and religious activities of society and orients them exclusively toward its aims. The rights of the individual are totally subordinate to the rights of the state and he may be molded, used, and destroyed as the interests of the system may require.

In its political structure the state is the Party and vice versa. The Soviet Constitution of 1936 pretends, on face value, to incorporate the basic freedoms guaranteed in a democratic society including such traditional rights as freedom of religion, speech, assembly, press, and petition. In practice, no political philosophy other than communism is tolerated and the "freedoms" exist only within the bounds of Soviet dictates. Thus the Party is in the unique position of offering the electorate which of several Communist candidates it may select, defining what constitutes the basic freedoms, and having the exclusive right to criticism of the order of things.

The recurrent specter of ruthless purges, kidnappings, and assassinations, the wholesale deportations of dissident groups to remote and barren wastelands, reveals the perfidy of Soviet claims to democratic government. All the constitutional semantics notwithstanding and regardless of the intellectual perversions performed by the Party to prove that black is white, the domestic record of Soviet communism speaks for itself and stands as an indictment against the political system.

But Communist leadership cannot hold power without the brute force of the Soviet security organs—"the handmaidens of Communist rule." The control apparatus of the Soviet Union is complex and all pervasive. The Soviet secret police system is a large paramilitary force of about 500,000. Its functions include counterintelligence

activities against political enemies of the state, the operation of slave labor camps housing an estimated 7 to 10 million prisoners, and the operation of border patrols to prevent illegal frontier crossings in either direction. Other systems of police control over the Soviet system are evident everywhere. The privilege to travel in the Soviet Union or to live in a specific place is dependent largely upon one's political reliability as determined by the police. Appointment to membership in the Communist Party, admissions to institutions of higher learning, and advancement to senior political positions in government are all dependent on police clearance.

The less direct controls embrace the entire pattern of the Soviet social system. All the information media—to include the press, radio, periodicals, and motion pictures—are under the state censorship bureau which, in turn, takes its cues directly from the Party. Art, the theater, opera, literature, and all other forms of cultural expression are directly subservient to the propaganda agencies of the Party whose two consistent themes for internal Soviet consumption are the idealized virtues and glories of the Communist system and the vilification of its enemies.

The educational system, as in any totalitarian state, is predicated totally on the perpetuation of the Soviet scheme of things. Russian youth, according to Lenin, must be molded in taste, morals, intellect, and physical strength to further the worldwide triumph of communism. Mass education in accordance with inviolable Soviet directives has been introduced successfully at all grade levels. Professional training at the college and university level is increasing at a tremendous rate with the publicly stated objective of surpassing the comparable output in Western centers of higher learning. The content of Soviet education, while emphasizing the physical and natural sciences, also is geared to the basic propaganda themes of reiterating Soviet

superiority over all other political, social, and economic systems; the inevitability of an eventual global Communist victory; and the "enmity" of the West toward Russia.

As for the classless society, Lenin, and particularly Stalin, treated this Marxian theory harshly. Although the pretense is maintained that the campaign to build a classless society is succeeding, the available evidence points to a wide divergency among the strata of Soviet life. These differences are based on political, economic, and social distinctions which have become jealously guarded prerogatives of a small minority. For example, salary variations run the gamut of extremes between the ruling elite (high government officials, industrial managers, and military officers) who earn 5,000-10,000 rubles a month and farm workers who gain 300-700 rubles a month. Slave laborers (by definition) are paid no wages and are ostracized further as a class by the stigma of excommunication from society. The emergence of a "managerial class" which enjoys great advantages and privileges over the ordinary citizen tends to create also a strong desire on the part of this elite group to preserve the *status quo*. Thus class differentiation now is a permanent characteristic of Soviet life and has created an almost unbridgeable chasm between the rulers and ruled in the Soviet Union.

Over-All Strengths and Weaknesses

The Communist movement must be granted a high potential of strength on the grounds of discipline and organization. A convinced Communist is a dedicated man, comparable to a religious fanatic. This is due not only to his own convictions but to the rigid Party system of training and selection, and to frequent and utterly cold-blooded purges. The leadership prefers to keep the Party relatively small, but tightly knit and highly disciplined. This facilitates the operation of highly centralized control. This is the real and practical meaning of the "dictator-

ship of the proletariat," which is just another "doubletalk" term purporting to indicate broad representation of the common people but, in fact, denoting the ruthless overlordship of a militant organized minority.

Some of the weaknesses of communism stem from overreaching. The entire system has become a drive for absolute power. Its object is possession of *all* power, not only direct political power but all social, economic, and political power. Therefore, it aims to destroy all rivals for power of any kind. This, its most important working characteristic, makes it fundamentally akin to fascism. It also is a basic reason for its evil consequences. In fact, communism may be defined as a worldwide conspiratorial movement for the conquest of monopoly of power. Economically it tends to be collectivist; socially it is totalitarian; politically it is dictatorship based on terror and mass deception.

The alleged goal of world communism has become an irrefutable dogma. If that dogma is wrong, the whole technique of the means is wrong too. The Communists pretend that Marxism is a science, but they are inflexible and dogmatic at the level where science is flexible, the level of fundamental theory. Physics is a science in which the ideas of Newton were upset in theory by Einstein before they were upset in practice by the atom bomb. Communism is no science, for the starting point in *The Communist Manifesto* is unchallenged and unchallengeable. It rests on the assertion of faith, and the strains produced by experience that contradicts the faith must grow. This is more true, in that they deny the very basis of faith which is spiritual. Their complete negation of the dignity of the individual and the moral nature of man brings about weaknesses which are apparent in some of their tactics that exist only to cover these weaknesses.

The Iron Curtain would have no pur-

pose if the people behind it were immune to what might come through it. The police state exists to perpetuate the "greatest hoax in history"; to keep the people ignorant of the true nature of their sorry plight. Purges of the Party and mass transfers of populations would not occur if dissent, doubt, and mental confusion were not bred by the automatic effect of the system upon the people who have to live in it. The Communists have tried to forget that man has a soul and a free will. Therein lies their basic dilemma—the fatal weakness of the Communist system.

Soviet Grand Strategy

Marx's theories became political reality on the night of 7 November 1917. With ferocious zeal and violence, Lenin smashed an old order in Russia and created the world's first Communist state. From this single event can be traced the origins of contemporary conflicts in international affairs and the partition of the earth into the two opposing power blocs of communism and the free world, with a twilight zone of neutralism and uncertainty in between.

In the growth and strengthening of the Soviet Union since that time, there has been displayed an amazing pattern of behavior on the part of the Kremlin's rulers in the field of foreign affairs. Deviations in policies and shifts in tactics have been the hallmarks of Red diplomacy. The Soviets alter their mood and manner as the situation warrants and are adroit masters in the use of the "half-truth" technique and vilifying propaganda against the so-called ills of capitalism. It is appropriate to recall Stalin's remarks that "words must have no relation to actions . . . sincere diplomacy is no more possible than dry water or wooden iron."

And yet, viewed now across a time span of more than four decades, there is evident a basic consistency in Soviet grand strategy. The themes and the methods may vary, but there always has been a relent-

less pursuit of the primary objective—the destruction of capitalism and the complete bolshevization of the world. Since this fundamental aim is founded on Marxian-Leninist theory, which also teaches the Machiavellian concept that any and all means to an end are ethical and justifiable, it may be concluded that the consistency of Soviet policy lies in its faithful adherence to basic theory, its complete orientation toward a single objective, and the employment of varying tactics to attain the objective.

What then has been the pattern of Soviet tactics? What are the techniques utilized, and what international circumstances favored their employment? What is there in the cycle of events of the last 40 years that might furnish an understanding of and perhaps an insight into the trend of future Soviet conduct? The answers can be deduced by an analysis of Soviet foreign policy.

Soviet Foreign Policy

Five distinct and recurring themes have been easily recognizable in Soviet foreign policy. These are:

1. World communism.
2. Peaceful coexistence.
3. Encouragement of nationalism in undeveloped areas.
4. The threat of force.
5. The national "security."

These five notes of the Kremlin's musical scale sometimes have been played as separate tones, other times in combinations, or on occasions, all together in one loud and clear chord. But whatever the tune being played, the song is written to end at the same place—the attainment of absolute power.

World Communism

Marxian theory held that world revolution was inevitable and would evolve as a natural process when the proletariat had become sufficiently large and aware of the class struggle. Lenin abridged the time

scale and scope of this theory by initiating the "Bolshevik revolution" and restricting the advent of world communism to the Soviet Union. So successful was his leadership in Russia that the technique of revolution by a small, hard core group of professionals became a basic cornerstone of Soviet policy. The Soviets will support revolutions abroad and incite the capitalistic nations to war among themselves, but will employ flexible tactics and varying efforts rather than a master plan for world revolution. The technique of "indirect aggression" has achieved noteworthy results in the quest for world communism which is in accord with Soviet security and national interests.

Coexistence

Since Stalin's death in 1953, the recurring theme from Moscow has been that peaceful coexistence between communism and the West is possible. Khrushchev and Bulganin repeat this anomaly frequently on their visits outside Russia to lull the Western World into a false sense of security regarding ultimate Soviet intentions. On the face of it, the idea of continued coexistence between capitalism and socialism is completely heretical in the strictly Marxian sense. However, it has been seen how Lenin and Stalin adroitly modified Marxian theory as an appropriate expediency to suit the needs of the Soviet Union. Remembering that Lenin justified the tactic of temporary retreat if it advanced the long-term objective of communism, we can recognize coexistence as a convenient device to further Soviet interests of the moment and one just as easy to discard when its purpose has been served.

Encouragement of Nationalism

One of the Soviets' principal successful weapons during the cold war has been to agitate so-called colonial peoples to press for independence and the rejection of what has been termed foreign economic exploitation. The evidences of this policy

are numerous in Southeast Asia and the Middle East. An eight-year guerrilla war by the Communist Vietminh rebels succeeded by 1956 in the establishment of a Red dictatorship in the northern portion of Vietnam. A similar, but unsuccessful attempt was made in Malaya. In the Middle East the Soviet Union poses as the champion of the Arab peoples and attempts to encourage them through economic and military aid to sever their relations with the West. Soviet interest in Egyptian affairs and Communist activity in Syria represents ominous portents for the future.

All this is not new in the history of Soviet foreign relations. The policy stems not only from Marx's declamations against colonial exploitation, but from Lenin's more practical scheme that loss of colonies through independence or severance of economic ties would seriously weaken Western Europe, precipitate its economic collapse, and thereby hasten the advent of the world revolution. The basic strategy, according to Lenin and Stalin, is to identify the Russian proletarian revolution with the rising tide of nationalism throughout the world and then to welcome the new nations within the Soviet orbit as pro-Soviet regimes or Communist satellites.

The Threat of Force

In November 1956 the world witnessed one of history's most brutal uses of naked force in the suppression of the Hungarian revolt for independence from the Communist dictatorship. Memories are short lived if this is the only instance recalled in which the Soviets used or threatened to use military power to achieve their ends. It is necessary only to turn again to the writings of Lenin to understand that force is an essential ingredient in his recipe for revolution. He had the utmost contempt for pacifists. Under his leadership from exile, the Bolsheviks undermined the Imperial Russian Army in 1917 only to clear

the path for the Bolshevik accession to power after the overthrow of the Kerenski Provisional Government in November 1917. Shortly thereafter, Lenin proclaimed the birth of the Red Army (February 1918) to combat the counterrevolution and subsequent danger of foreign intervention.

Ever since the revolution and the Civil War, the Red Army (later renamed the Soviet Army) has played a unique role as an instrument of Soviet foreign policy. Prior to 1939, while the army was being strengthened and increased in size, it was not employed outside Russia on a mass-scale basis for aggressive purposes. True, it was used in the war against Poland in 1920 (and soundly defeated) and successfully invaded Manchuria in late 1929. Further, the Soviet Army did occupy Outer Mongolia to establish a Soviet People's Republic. But it was not until World War II that the army was employed directly as the executor of the revolution with regard to other countries.

Following the Nazi-Soviet Pact of 1939 the Soviet Army marched into Poland to share in its partition with Nazi Germany in spite of the Soviet-Polish Treaty of non-aggression of 1932. In November 1939 the USSR attacked Finland and seized strategic territories from that country, although the Soviet-Finnish nonaggression treaty of 1932 had been extended until 1944. A year later the Soviet Army renewed its predatory activities by occupying the Baltic States and also parts of Romania. All these acts of direct military aggression were part and parcel of Soviet foreign policy to create buffer territories against a possible war with Germany and to increase the size of the USSR.

Since World War II the Soviet Army has not crossed frontiers to commit overt aggression except in the case of the Hungarian Revolution in 1956. However, it has been employed in far more subtle but not less effective ways to achieve the immediate objectives of the Kremlin. By

hardly the strangest coincidence, all those nations in Eastern Europe which were occupied by the Soviet Army in the course of their "liberation" from the Nazis, have since adopted Communist regimes.

The use of military force and, more recently, the threat of its use have become a basic theme of Soviet foreign policy. In its postwar policies the Soviet Government appears to regard the active use of its own military power as the last resort which is consistent with Lenin's teaching, "to postpone operations until the moral disintegration of the enemy renders the delivery of the mortal blow both possible and easy." However, we should remember Khrushchev's recent statement to the effect that the Soviet Army readily will come to the aid of any Communist regime whose internal order is threatened.

National "Security"

We must use the antagonism between the . . . existing systems of capitalism . . . in such a way as to set one against the other. . . . But as soon as we are strong enough to defeat capitalism as a whole, we shall immediately take it by the scruff of the neck.

This is Lenin's philosophy on how to play one nation against another. The Soviet "divide and conquer" tactics are combined with unrelenting efforts to establish and maintain friendly Communist regimes in those vital areas which are contiguous to the Soviet Union. Thus Stalin and his successors hope to achieve the Soviet concept of national "security," which in effect means the unequivocal elimination of any possible external threats to the continued existence of the Soviet regime. Since all capitalist and other non-Communist countries are considered the inevitable enemies of the Soviet Union, any device to create conflict between them would in turn help the USSR.

In the postwar period and throughout the cold war, the Kremlin's leaders have not ceased to play the theme of "divide and

conquer." Evidence of this is apparent in frequent Soviet attempts to isolate the United States from her allies, to exploit minor differences between the Western Nations, and to woo and threaten alternately neutral or uncommitted nations to the Communist cause. In combination with the other themes of foreign policy, the game of power politics remains a favorite technique of the Kremlin strategists and is designed, like the others, to win absolute power for the Soviet Union and assure her national "security."

Communism and the Soviet Bloc

The Communist states in Eastern Europe and Asia together with the Soviet Union generally are referred to as the Soviet bloc. Some students of international affairs argue that Red China is not in the same category as satellite nations of Eastern Europe and that her leaders are playing an increasingly independent game from Moscow or at least acting more in the role of coequal partners with the Kremlin rather than as hired hands. These academic differences notwithstanding, the practical consideration we must bear in mind is that the Communist world essentially acts in concert in response to the Kremlin Party Line and, as such, the Soviet bloc pursues a common course in opposition to the West.

This unity of effort is achieved in a number of ways. First, the key national leaders are devout Marxists and Leninists, most having learned their theory in Russia. Second, the Soviet Union continues to occupy a number of these satellites with Red Army units so that attempted defection from Moscow results in grave consequences (for example, Hungary). Third, the Soviet Union, through financial credits, technical aid, and forced trade agreements, has made many of these countries completely dependent on Russia for economic survival. Within the vassal states themselves, the control apparatus to enforce a Communist dictatorship (secret po-

lice, frontier guards, national armies) is modeled on the totalitarian apparatus used within the Soviet Union to keep her own citizens in line.

In June 1955, partly to "legalize" the prolonged stationing of their troops in Eastern European satellites and partly as a propaganda move against the West's defensive alliances, the Soviets resorted to a formal international organization to assure Communist unity. This device took the form of the Warsaw Pact. This treaty is a 20-year mutual defense agreement between the USSR, Albania, Bulgaria, Czechoslovakia, Eastern Germany, Hungary, Poland, and Romania. The Asiatic Communist states, while not signatories to the pact, are represented at meetings of the treaty organization and faithfully have indicated their endorsement of the spirit and aims of the treaty. As a military strength, the Soviet bloc has an estimated ground troop strength of six million men. The active Soviet Army alone is organized into approximately 175 divisions. The Warsaw Pact satellites are believed to have about one million men in active service while Red China boasts an army of two and one-half million. By adding sizable air, naval, and police units, it is apparent that forces of international communism are supported by a formidable array of military strength.

The weaknesses of the bloc have become apparent in recent years. The ghosts of nationalism and discontent with Red dictatorship have come to haunt the Kremlin. Beginning in 1948 Yugoslavia broke with the Soviet order and pursued an independent national course. In June 1953 a riot against increased work quotas in East Berlin resulted in a general strike throughout East Germany that required the use of Soviet troops to put down the demonstration. In June 1956 the Soviet Army again was needed to stifle a workers' riot in Poznan, Poland. The results of that disorder culminated in Poland's gaining a

greater degree of independence from Russian rule than she previously had enjoyed.

The most dramatic break within the satellites occurred in October-November 1956 when a mass uprising in Hungary temporarily ended the Communist dictatorship. The intervention of Soviet occupation troops to reestablish a puppet Red regime remains unparalleled in postwar history as an illustration of the brutality of the Communist police state. In short, the Soviet Union must reckon with a resurgence of nationalism in her vassal states. Reliance on force alone is not sufficient to stifle opposition to Russian domination on a permanent basis. This explains, in part, Moscow's current willingness to return some measure of sovereignty to those satellites whose national leaders are reliable Communists.

Prospects for the Future

Having analyzed the theory and practice of communism in some detail, it would be well to examine the future and attempt to visualize the state of things to come. In the final analysis, there are two eventual alternatives—international communism which implies a complete extermination of our way of life as we know and cherish it, or a free, peaceful world wherein the rights and dignity of man are inviolate. The former is the ultimate goal of the Soviet regime, whereas the latter is the avowed objective of the Western Alliance. In examining the prospects for the future, consider briefly three particular aspects of Soviet policy that offer some insight into the "Communist Grand Offensive" to dominate the world of tomorrow.

In the first instance, the Soviets have undertaken a strenuous economic offensive in the underdeveloped areas of the world in order to negate the influence of the West and extend the orbit of Communist influence. By financial, technical, and material assistance among the "neutral" nations, the Soviet regimes aspire to create an at-

mosphere of friendly collaboration as an antidote to American "economic imperialism." Although plagued with internal economic difficulties, particularly in the field of consumer goods, the Soviet Government, through its rigid control over the Russian economy, probably can furnish to a large extent the promised economic aid. The Russian masses will suffer as a consequence but this fact is of minor significance to the Soviet hierarchy.

Second, as a corollary effort, Moscow has launched a virulent propaganda campaign against colonialism with the purpose of securing the role of world leadership in the minds of neutral nations of the Middle and Far East. This tactic is a prelude to the establishment of strong political ties and collective security alliances that will advance the cause of international communism.

The basic reason for this policy appears to be Khrushchev's realization that capitalism is not on the verge of internal disintegration and a frontal assault on the West should be abandoned in favor of the indirect attack technique. When appropriate, the Soviets also are quite willing to give military assistance in the form of arms, equipment, and advisory personnel either to support revolutionary elements or to aid native regimes against foreign encroachment.

The third facet of Soviet policy that merits attention can be best expressed by the Soviet belief that time is on their side. It is essential for the Soviets to consolidate the gains they have acquired since the end of World War II and ensure the stability and integrity of the Communist controlled areas of the world. This period represents a superficial pause in Soviet expansionism since the forces of subversion and infiltration are ever at work to acquire new converts to the "new" order. International conferences, disarmament proposals, and cultural exchanges are but a few of the lures that the Soviets use to

propagate the theme of peaceful coexistence and to lull the West into believing that the specter of world communism is a mere fantasy or illusion—"it just can't happen here." As the years go by, the Soviets will use every means at their command short of overt conflict with the West to strengthen their power and expand their influence.

From the Soviet viewpoint, the United States remains their main enemy and principal threat to the achievement of in-

ternational communism. Soviet security never will be a reality until the American way of life ceases to exist. The issues are clear-cut; the consequences irrevocable. The theory and practices of communism are irrefutable proof that the Soviet objective is to settle for nothing less than a Communist world.

The CHALLENGE is clear. We must meet it with a stronger determination to attain a greater objective—FREEDOM FOR THE WORLD.

Communism maintains a vast military power. That power includes the world's largest army, the world's largest submarine force, and also a growing air strength equipped with atomic weapons and missiles; and it is in the hands of a dictatorship unrestrained by moral principles. Free nations should not fail to recognize the Communist objectives which Communists themselves have blueprinted for all to hear and read.

Some people probably are bone-tired of the sounds and actions of Communists, even tired of the sounds and actions of those who interpret the sounds and actions of Communists. But in that fatigue lurks danger—the great danger of apathy and wishful thinking which might cause us to be willing to rest on our oars, or to rely on some ostensibly magic shortcut to world stability.

There can be no resting of our oars. I can find no magic shortcut, and I fear none exists. International communism is a continuing threat to our security.

* * * * *

Freedom is THE most dynamic living force.

In this respect, we are truly fortunate—we have a good cause. Our free system is the complete antithesis of Communist dictatorship. The United States, its institutions, its people, and its great progress are the strongest refutation of Communist dogma. We are living proof that the assumptions on which communism is based are false.

Admiral Arthur Radford, Retired

THE CANADIAN NORTH

Major Reay M. Black, *Royal Engineers, Canadian Army*
Student, U. S. Army Command and General Staff College

ONE need only glance at a polar projection of the Northern Hemisphere to realize the highly strategic position of Canada among the nations of the world. As a result of her size and geographic location in the Western and Northern Hemispheres, her vast potential of natural resources, postwar industrial growth, role in the Commonwealth and other regional and world organizations, and her successful struggle in defiance of geographic and economic forces, military planners are devoting increasing attention to this part of the globe.

The modern air age which is mastering vast oceanic and land distances, but has made the terror of nuclear warfare universal, places Canada on the crossroads of the world in the heartland of air geography, and links her with the United States in joint continental defense as exemplified in the radar warning systems. See Figure 1.

With these facts in mind the balance of this discussion will be centered on that part of Canada commonly called the Canadian North.

The impression has been formed that people from more southern areas generally have a rather pessimistic outlook on this part of the world. One hears such statements as: "the barren wasteland," "the buffer zone," "military development must supersede commercial development," "higher latitudes are of greater military than

economic significance," and "climatic conditions make economic development practically impossible."

All these statements are significant, but the picture is not quite so pessimistic. In fact, in recent years it has changed considerably to one of optimism.

Increasing Importance

In late years more than ever before, the eyes of Canadians have been focused on the north. To the outsider, Canada is the north and he thinks of her people in terms of northern symbols such as the Mountie, the fur trader, the prospector, dog teams, sleighs, and deep snows.

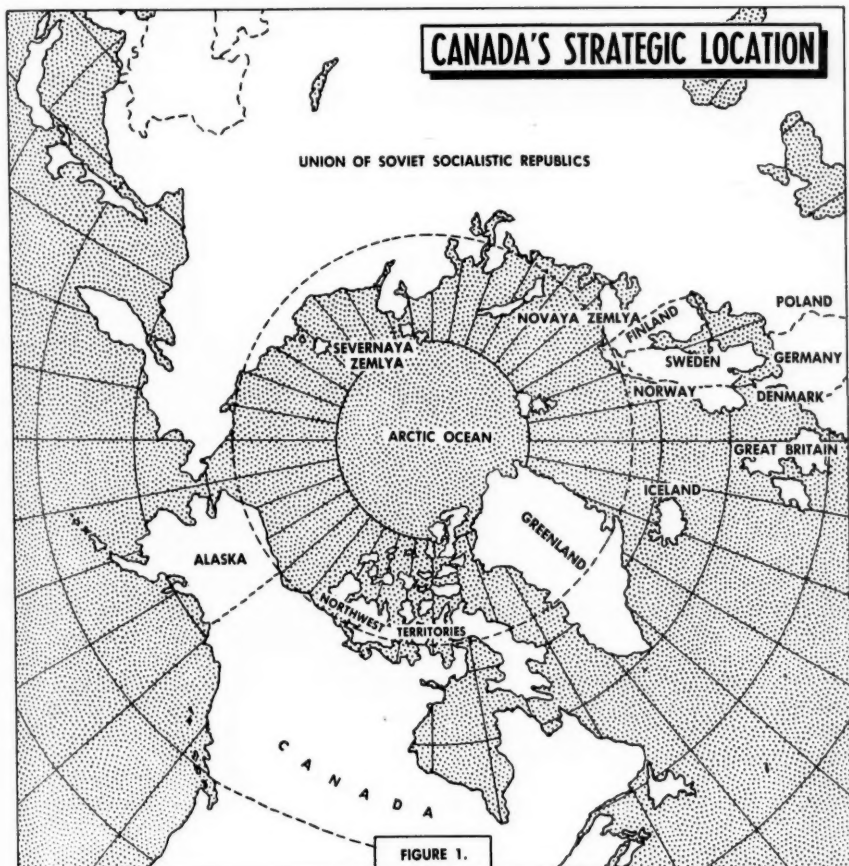
The native Canadian sees himself and his north country in a more practical sense. He knows that this vast northland is a buffer. He knows of the early warning radar systems and other defense installations, but he also knows that progress in the north is putting money in his pocket from Yellowknife (1)* gold; Athabasca (2) uranium; Ungava (3) iron; MacKenzie (4) oil; and from furs, fish, and pulpwood from many different parts of this so-called wasteland. He also knows of the vast hydro projects underway across the north at such places as Kitimat (5), Knob Lake (6), Pine Point (7), Uranium City (8), Keno (9), and Whitehorse (10), all contributing to the rapid development of these areas.

* Numbers in parentheses correspond to numbers in Figure 2.

Canada's highly strategic position, her vast potential of natural resources, and successful efforts in development of the northland make this great country of vital importance to the global military planner

What is this mysterious and romantic north? To the average American all of Canada is the north. To the Yellowknife prospector the north begins at the Arctic Circle, but in general when the Canadian

This vast territory includes the most massive range on the continent, a million square miles of desert, two fresh water seas each as large as Holland, an island larger than Sweden, a river 2,600 miles



speaks of the north he means that part of Canada that is far enough away from the populated areas to be considered remote, the part that lies north of the 55th parallel. This area comprises two-thirds of the nation, making up a land mass twice the size of India and far more varied.

long, and more lakes than in all the rest of the world.

Land of Extremes

The north is a land of extremes and contrasts. In winter temperatures drop to 83 degrees below zero at Snag (11) the

coldest spot on earth, and in summer it can soar to 103 degrees. On the MacKenzie delphiniums reach a height of six feet in August, yet in other parts, a birch tree takes 100 years to grow a foot. There are mountains four miles high, fissures a mile deep, fiords a hundred miles long, and glaciers a quarter of a mile thick. There

tapped supply of lead zinc ore lies on the shores of Great Slave Lake (13)—120 million tons seem a conservative estimate. What may be the world's largest untapped source of iron ore—perhaps 60 billion tons—lies near Ungava Bay in Labrador. Certainly the world's greatest untapped source of oil, enough to supply global needs

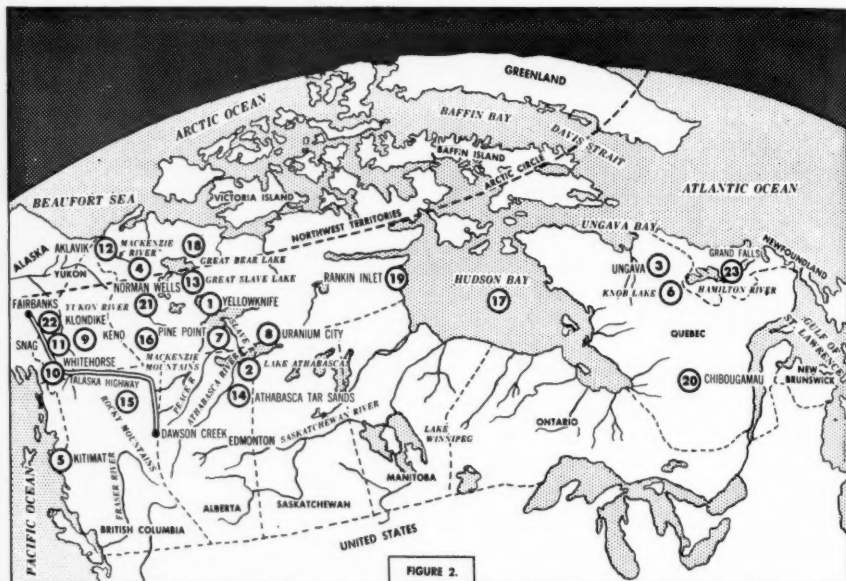


FIGURE 2.

are beautiful green lakes—a paradise for the fisherman.

Recently this area has given the native Canadian, and indirectly many other countries of the free world, the benefits of its vast natural wealth. Canada's largest source of silver is at Keno. Her fourth largest gold mine is at Yellowknife. Three-quarters of her iron, and half of her uranium comes from the north. The world's largest fur trading post is at Aklavik (12) where about 300,000 muskrat pelts are marketed each year.

Still, the greater proportion of the north is unexplored and much of its wealth unexploited. Probably the world's largest un-

for a century, lies mixed with the tar sands of Athabasca (14).

Five Regions

There are, in fact, five different regions in the north:

On the west is the magnificent and beautiful Yukon Valley carved and formed by centuries of erosion and running water.

To the east run the Rockies (15) and north of them the unexplored and massive MacKenzie Range (16).

East of this mountain barrier is the fertile MacKenzie River valley and its tributaries—a river system that drains one-fifth of Canada. This, of course, is part of

the great plain that extends from the Gulf of Mexico to the Arctic.

Then for almost 2,000 miles is the scarred and polished rock of the great Canadian pre-Cambrian shield. It makes up half of the Canadian land mass, circling Hudson Bay (17) and holding about one million lakes and untold of riches locked beneath its surface.

Across the north of these regions from the northern Canadian coast to the polar ice cap is the Arctic archipelago made up of innumerable islands, 18 of them more than 2,000 square miles in size.

Superimposed on these regions are three distinct belts of vegetation running east and west. In the south the coniferous forest of spruce, pine, fir, and tamarac gives Canada her greatest industry—pulp and paper. North of this lies the taiga—the Indian name for land of the little sticks, the intermediate zone between forest and barrens. Then at the top is the Tundra region, treeless although carpeted with beautiful wild flowers in the warm months and snow in the winter.

Formative Factors

To appreciate fully this vast land with its varied regions, climates, and wealth one

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must know something of the forces that shaped it. Most important of these is the formation of the great shield itself. This mass of rock is the crust formed as the molten earth cooled. Over countless ages, while the continent moved, heaved, and cracked, while seas overran the land, and while mountains erupted, the shield held firm. Giant forces have deformed its surface—seas have washed over part of it, mountains have been eroded to dust, but this action has left behind rich mineral deposits like Labrador's iron ore. In the cracks and fissures more metals have been discovered—uranium, cobalt, and silver on Great Bear Lake (18); gold at Yellowknife; uranium at Athabasca; nickel at Rankin Inlet (19); on Hudson Bay, gold; copper at Chibougamau (20); and the iron trough of Ungava.

Then, too, in ancient times the shield was an island surrounded by sea that split the continent in two. This sea left swamps, strange plants, and other animal and vegetable life that over the ages settled in layers, and from the resultant pressures have been converted into gas and oil. This accounts for the large oil developments in the Canadian northwest, the Norman Wells field (21) and the strange Athabasca tar sands. The Athabasca area contains probably the greatest oilfield in the world, but it is still unexploited since no practical process has been found for extracting the sand. Estimates of these reserves vary from 100 to 300 billion barrels or almost double the entire liquid reserves of the world. It now is believed that the entire northern area contains oil reefs and the search and development goes on at a rapid pace.

Running water carved the Yukon Valley and its tributaries and brought about the Yukon gold deposits. The gold era in the Yukon started with the Klondike (22) and the days of '98."

Moving ice carved the rest of the north. Only the Yukon interior escaped the

glacial action that moved back and forth over the northern part of the continent for centuries like a giant bulldozer. This action changed the whole face leaving large boulder fields, long grooves, valleys, hills, lakes, and generous sedimentary deposits. One of the most valuable results of this action was the cleaning of the Canadian Shield, leaving the minerals within easy reach of human endeavor.

Stages of Development

One could say that the Canadian North has been developed in three stages. First—the fur stage now drawing to a close. The trapping of muskrat, beaver, mink, marten, fisher, and fox no longer can sustain the north because of the rising population and vast economic development.

Canada now is in the midst of the second stage—the mining, that began with the Klondike, but boomed with the coming of the airplane in the twenties, and is increasing even more now.

The third stage is just underway—the development of hydroelectric power. Canada's potential has been rated at 66 million with only about one-fifth harnessed. The greater amount of this lies in the vast watersheds of the north. Already many projects are underway and some are completed: Kitimat and its aluminum industry; Grand Falls (23) and its iron ore; Keno and its silver and neighboring lead zinc; and Whitehorse on the Yukon. It is interesting to note that the Hamilton River (Grand Falls) and the Yukon River each has twice the potential of the St. Lawrence River Project.

Many other changes such as the northward extension of highways and railways are taking place. In the past few years many miles of road and railway have been constructed to sustain and connect these development areas with the more populated areas of Canada. The cold war has brought about the two radar lines across the roof of the continent. Social conditions are improving with government legisla-

tion, and research and development gradually is overcoming the peculiar problems of the north.

The Canadian North is alive, not just with troops, construction men, prospectors, explorers, and scientists, but with growing communities that in time will make their place in the Canadian nation.

The Future

What about the future? It is quite evident that three areas are under spectacular development now: the Yukon, the upper MacKenzie, and the Labrador Ungava area.

The hydro project on the Yukon means new towns in the northwest and on the Pacific coast because of the presence of smelters, cheap power, and the rich deposits of copper, lead, and zinc in this area.

One of the greatest lead zinc masses in the world lies on Great Slave Lake and already plans are being completed for a railway to this area and a power project on the Slave River. This, coupled with the large oil and gas potential in the MacKenzie area, will bring about vast changes.

At the top of the Labrador Peninsula lies the largest deposit of low-grade iron ore in the world. Together with the other developments in Labrador, this may well bring sea ports to Ungava Bay, linking it to Europe by a sealane and to North America by a continuation of the railroad that is now halfway up the peninsula.

However, these are only small pinpoint areas when one considers the total map. There still are vast areas waiting to be explored and developed. The development has started and, at present, it is progressing at a pace previously unheard of in Canadian history. It is safe to forecast that it will continue to do so and that as the years roll by, new communities with connecting transportation systems will spring up, and the north country will no longer be that terrifying frontier.

This, then, in brief outline is the north

as the Canadian sees it. Not that barren wasteland, not the buffer zone, not a land to be developed and exploited by the military, not the land where climate prohibits economic, social, and industrial development, but a land with a tremendous potential, a land endowed with vast wealth and beauty.

There are, of course, still challenges. Black flies and mosquitoes, a bar to development, must be eradicated. Permafrost must be mastered, highways, railways, and bridges must be constructed at costs previously unheard of, and probably most important, the people must adjust themselves to living in lands with such extremes and contrasts. In spite of the tremendous task ahead the challenge will be met and the Canadian, whether he be an investor, miner, prospector, oilman, soldier, statesman, or just plain "Joe Canuck" has his sights aimed northward because he need

only look in that direction to know where the future lies.

Conclusion

In summary, it must, therefore, be apparent to the strategist, the military planner, or the student of military geography that this vast area, an area making up a good proportion of the earth's surface, must be viewed in a fresh light. In the era of the hydrogen bomb, the supersonic jet plane, and the intercontinental missile, thoughts on the Canadian North, positioned as it is between the two most powerful nations of the world, cannot be restricted to matters of defense and other military development, but must take into account the spectacular and rapid economic development that is taking place throughout this great land.

The northland still is the frontier, but in Canada it represents the future.

I sometimes feel that there is a tendency to regard general war as the only contingency that really matters—that it requires all our preparations to the exclusion of consideration of lesser situations. It would be a mistake, I believe, to become so hypnotized by the possibility of a great atomic war that we prepare for no other kind of military challenge. In the long run, these less catastrophic forms of warfare may prove more dangerous than the direct threat of atomic attack. Hence I feel that we must take care to produce forces with such a scale of application and flexibility in tactics and in weapons that they are not keyed to one reaction but offer a wide range of possibilities to our responsible leaders who make the critical decisions.

Furthermore, I am impressed with the fact that our deterrent strength cannot be unidimensional. I use that term because I consider it descriptive of our condition after World War II when we had only one kind of military response, namely the air-delivered atomic bomb. Despite our possession of this capability for retaliation, we have seen the enemy wage war in Greece, in Korea, in Vietnam; we have seen the tragedy of Hungary—historical facts which remind us that one kind of reaction is not adequate to meet all situations.

On the contrary, our strength must be tridimensional in character—on the land, on the sea, and in the air—and we can afford no chink in the armor of deterrence.

General Maxwell D. Taylor

About Meetings and People

Colonel Frank Kowalski, Jr., *Infantry*
Commandant, Command Management School, Fort Belvoir, Virginia

RESearchers report that business executives spend 40 to 65 percent of their time in meetings. Military commanders and senior staff officers, expressing a strong aversion to conferences, grudgingly admit that about 25 percent of their time is taken up in this manner. The number of meetings and conferences that go on every day in the Army throughout the world must be fantastic. It is obvious that this is the normal human way of doing business.

Nevertheless, because frequently meetings produce more hostility, friction, and hot air than real accomplishments, the institution as it pertains to committees, particularly, has been the brunt of many jibes. Here are a few.

The best committee consists of three members with one position vacant and a second member home sick.

A camel is an animal invented by a committee.

A committee has neither a soul to be damned nor a body to be kicked.

A board of directors is an agency which keeps minutes and wastes hours.

Throughout this entertaining witticism runs the indictment that committees, conferences, and meetings are a waste of time. Too often they are. Certainly, committee management is a very expensive form of management. On the other hand, we all have experienced that satisfying group feeling of accomplishment and pride

in solving a tough problem with the help of others. This should give us confidence that meetings and conferences can be made productive. It also should alert us to the need for developing our skills not only to observe the symptoms but to diagnose the cause of nonproductive meetings.

This discussion will examine:

1. What happens in a meeting.
2. When is a meeting necessary.
3. What can be done to make a meeting productive.

What Goes on Here?

The problem of meetings is a problem of working with people in groups. Literally, we are born into a group and must solve the enigma of working with each other.

It is impossible to differentiate the individual from his family group, his work group, his church group, or his coffee group. Personalities of people grow out of their interaction with other people. There is no way of standing alone; we always relate to others.

It is significant, however, that too few of us are aware of our own behavior in meeting situations. Most of us, for example, see ourselves as a friendly, cooperative, sensitive person. Do our actions, however, corroborate this view? People react not to what we think we are, but to how they perceive us.

As we assemble in a group, most of us

Are committees, conferences, and meetings a waste of time? Much can be learned about working with people in meeting situations—each is a new human experience, has its own dynamics, and own pattern of forces

are concerned with working on the task assigned. Unconsciously, however, we rapidly become involved in deep-seated emotional interactions with each other. If we are to improve our meetings, we must learn to recognize the complex forces of group dynamics and develop our skills to cope with them.

Communications

Fundamentally, a meeting is a media for communications in a face-to-face situation. The participants, the group, and the organization each come to the meeting with what might be called a specific KASH position in terms of Knowledge, Attitudes, Skills, and Habits (behavior). In the dynamics of human behavior, diverse forces interact in a struggle to sustain or modify the KASH positions of the three elements involved. The wants of the organization, the group, and the participants often are conflicting. The meeting may satisfy the needs of one of the participants, the leader, but if it does not enhance the position of the other elements, it cannot be a good meeting. Communications in a meeting, therefore, must serve to produce some improvement either in the knowledge, attitudes, skills, or behavior of the

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individual participants, the group, and the organization.

The process of communication between people in a face-to-face situation is complex. It must provide for receiving, evaluating, and transmitting information, including facts, ideas, opinions, and most significantly, intent. These communication functions are difficult to isolate in a meeting since they are being performed concurrently by all the participants. They are complicated by the fact that at least two of the senses, hearing and sight, are involved continuously.

People in a meeting are not only talking and listening but they are watching and making bodily movements (frowns, yawns, and smiles). To receive, evaluate, and transmit communications effectively, one must not only learn to listen better, but must learn to see better. A glare may tell more than a polite word. It is well-established, for example, that a person who is not interested in the subject matter leaves the meeting psychologically by pushing his chair away from the conference table.

Communications are complicated further since people often talk past each other. This causes violent disagreements and creates deep-seated issues when actually both individuals may be talking about the same thing but describing different aspects of what they see. Words have multiple meanings, and a particular word conveys different meanings as intonations change. Words also have different meanings in different situations. An oral communication may be emphasized, clarified, confused, or completely changed by a facial expression or bodily movement. We must always be alert to the fact that all of us filter what we say and also filter what we hear. One thing is certain, as communications in a meeting fail, emotions rise and productivity falls.

Research into communications in meetings shows that there always are those in

a group who fail to understand the group decision. This has been demonstrated clearly in a clinical experiment conducted by the Command Management School. In this experiment a group of eight participants, including generals, colonels, lieutenant colonels, civilians, and military members of the sister services, are given data from which, as a group, they are required to deduce a pattern or principle of action and write a group directive which is used as instructions for other individuals to execute in a second test. The experiment has many objectives, but the point of interest here is what happens when the individuals in the group which deduced the pattern and wrote the directive take the second test.

Not always, but quite often, a group will solve the problem and write an acceptable group directive—that is, a directive which, if followed accurately, will produce correct answers in the second test. Yet when these persons take individual tests the results show clearly that they failed to communicate with each other in the group. Typically four of the eight group members will solve the test correctly, two or three will make about 75 percent, and one or two will do no better than could be done with random selection. Obviously, the one or two who score no better than those selected at random were not tuned in on their group discussions.

These results are about the same as those achieved by business and industrial executives in similar experiments. It is important to recognize that in any group some of the members do not understand fully what the group as a whole has agreed upon and that some may indeed have very little knowledge of what is going on. This is not a matter of intelligence, necessarily. It may well be that even though the entire group may have accomplished its assigned task, there are members in the group who may be working on their own personal problems.

Announced Tasks and Hidden Agendas

Although there are many meetings called at the whim of the executive, normally, meetings are scheduled for a purpose. The organization or a leader announces tasks to be accomplished or a group agrees upon a program. This is the public or surface agenda. Under the surface, and usually unrecognized by the group, are the unannounced hidden agendas of the individual participants and sometimes those of subgroups.

Every group is, at the same time, working on the announced tasks and also its hidden agendas. The National Training Laboratories (NTL) of the National Education Association demonstrate this situation dramatically in a training film they have produced. The film shows a civic group seated at a table conferring on an important community problem. As the chairman of the meeting calls upon each member to express his opinions, the participant turns his chair away from the conference table and faces his own personal subgroup which the camera suddenly brings into view. Unseen and unrecognized by the committee, the camera uncovers one by one the hidden subgroups which pressure, cajole, threaten, and plead with their beleaguered community representative. Faced with the program on the table, the participants actually spend most of their time and efforts struggling with the hidden agendas raised by their invisible committees.

It would seem that a competent leader and clearly defined objectives would keep the group working on the announced tasks. This is most difficult to achieve. A group may go to work rapidly on its problem, but if the hidden agendas are troublesome, the participants may give the appearance only of working on the task. Actually, individuals and subgroups devote their attention to the hidden problems which they must get out of the way before real productive work can be done on the surface

task. We should not be too critical of such groups, because usually when the conflicting motives, hidden desires, and personal needs are resolved, the group acquires a cohesion which enables it to come to grips rapidly and efficiently with the tasks assigned to it.

It is not a matter of whether hidden agendas are good or bad. They are always present. They cannot be wished away. They will plague meetings until they are resolved. The first step then is to recognize the nature of hidden agendas and their sources.

Leland P. Bradford lists three categories of hidden agendas.

The members of the group.

The leader.

The group itself.

Hidden Agendas of the Members

Insecurity probably is the most common cause of hidden agendas. A member may be seeking status, he may have divided loyalties, or he may consider himself threatened. In these circumstances he is inhibited, tense, and self-concerned. He is attuned not to what is being said but to the decibels of the meeting. He cannot work on the assigned task until he feels he has established himself favorably in the group. He may, as in the NTL film, be representing two groups. If the meeting is moving to a decision which he cannot defend to his invisible committee, he feels threatened and probably will fight. His attitude and behavior is affected more by his hidden problem than by the task before the meeting.

Tensions, fumbings, and halting beginnings of a group are typical manifestations of insecurity. These are particularly the outward signs of a conscious or unconscious struggle for power and influence. Each member of the group sizes up the situation in which he finds himself. He looks around to determine who will fight for power, who is likely to attack him, and who might be inclined to support him. This "feeling

about" and maneuvering is a characteristic behavior of any new group. A strong autocratic leader who decides to dominate the proceedings is likely to drive the struggle for power under the surface. This will not demolish or eradicate the hidden agendas. Their resolution is only prolonged. A weak leader who fails to assist the group in its formative struggles will find himself and the group dominated by one of the power seekers.

Another source of hidden agenda is the position paper. This situation often is observed in a large headquarters where one of the staff sections instructs its representative to take a particular position on an issue. The instructed member of the group sits patiently in the meeting giving the appearance of listening intently to the views of his colleagues. Customarily, he neither supports nor attacks the opinions of others. He waits and smiles and then at the precisely correct moment he strikes. The instructed solution, as though he thought of it for the first time, unfolds itself to the meeting. In this situation the member representing himself or a vested interest contributes nothing to the group except his self-centered enthusiasm. Neither the organization, the group, nor the participants have much to gain from an inflexible hip-pocket solution.

One of the most troublesome hidden agendas is the desire of a member to challenge the power and influence of the leader. This is a natural instinct of people. Some are more inclined than others to succumb to this need. It is, for obvious reasons, more often observed in civilian life than in the military. Nevertheless, it takes on many disguised forms in the Army. It may be an unconscious attempt to win favor in the eyes of colleagues. It can be an honest attempt to put the record straight or prevent a mistake from being made. Occasionally, it is an uncontrollable compulsion to assume group leadership, in which instance the seeker of power usually

abides his time. He waits until the group shows signs of not following the leader. At this critical moment he challenges. He contradicts the leader; he is apt to question procedures; and invariably he suggests solutions which he knows are acceptable to the members of the group. Obviously, in the military he cannot displace the official leader so he contents himself with controlling the group.

There also are members of a group who feel a strong dependency on the leader. Their contributions in a meeting are negligible.

Most of the members of a group are intelligent, highly motivated, cooperative persons who accept competent leadership loyally and strive to serve the best interests of the organization, the leader, and the group.

Hidden Agendas of the Leader

The leader may have any or all the hidden agendas attributed to a member of the group. He, as any other member, reacts to his private needs as he feels them. Basically, however, he is concerned with establishing and maintaining his position of power and influence. Most leaders like the prestige of leadership and want to hold on to it. Their behavior often reflects this hidden agenda. It is difficult even for the most democratic and permissive leader not to pull up on the reins occasionally to remind the members that he is the boss. He, too, may have a vest-pocket solution which he is likely to produce at the most propitious moment. And few leaders are so perfect as to refrain from correcting an obstreperous member. Because of the accepted power of the leader, his hidden agendas can play havoc with a meeting.

Hidden Agendas of the Group Itself

The hidden agendas of the group itself are not unlike those of individuals and stem from the same sources. The most sig-

nificant motivation of any group is self-preservation. It is concerned with perpetuating its existence. Accordingly, a group may permit and even encourage its members to argue and to discuss issues; it may even enjoy a good inside fight; but it will not tolerate a threat to its existence. It will assist its members to work on their hidden agendas and strive to resolve them, but if these hidden agendas threaten the life of the group, it will destroy the transgressor.

A group may give all the outward signs of confusion, uncertainty, inner conflict, and downright disappointment, but if at this point a member should walk out of the meeting, the group will draw together, bury its disagreements, and view the walk-out as a rejection of itself and look upon the dissenter as a deserter. Stemming from the central desire to survive, a group has tremendous powers and capabilities for self-discipline. It is particularly effective in disciplining a member who violates rules of procedures or accepted decorum. The leader and the members should be alert continuously to the hidden agendas of the group and utilize them for the balanced best interest of the organization.

It should be abundantly clear that if we are to increase the productivity of a meeting, we must understand what goes on in a group. This requires study, practice, and self-development. Insight into ones own behavior, diagnostic ability to probe below the surface of what appears to be happening, and sensitivity to the hidden needs of the group members are prerequisites for effective leadership. There can be no productivity, however, unless there is first a fruitful purpose for the meeting and the people are appropriately and correctly appointed and assembled.

When Is a Meeting Needed?

In examining the question "When is a meeting needed?" we cannot escape the implication that many meetings are called which are not required. In the Army there

are two categories of meetings which are particularly wasteful of time, energy, and resources. These are:

1. "Spur-of-the-moment" meetings called by the superior.

2. Traditional type meetings which have long outlived their original purpose.

The hasty on-the-spot meetings which so many of us have had to attend are the result of superiors' thinking in terms of their own needs and schedules. Absorbed in their over-all responsibilities they fail to appreciate that subordinates have their own tasks to perform. In this thoughtlessness, key assistants are being frustrated by constant interruptions to attend ill-considered "panic-button" conferences. This behavior is not only wasteful in time and energy, but frequently requires the subordinates to do their own work after normal duty hours. Like the short-tempered individual, the "meeting-happy" executive might consider counting to 10 before calling a subordinate.

The real time, money, and patience devouring monster is the meeting that is called every Monday or on some other predetermined schedule, because it is a "thing" in itself. This "thing" acquires a halo of respectability. Its purpose usually has become unclear long ago. Many of our staff and commanders' meetings fall into this category. Some admittedly play an important role in management, but most of them should be examined objectively. A meeting should never be allowed to become a habit or a tradition.

Because a meeting is an expensive management tool, it is suggested that before calling one, the following points be considered:

What is the purpose of this meeting?

Is a meeting the best way to accomplish this objective?

Can this matter be taken care of in another meeting, or at another time?

Am I calling this meeting to have others share the responsibility for decisions which I alone should make?

Am I calling this meeting to bolster my ego?

In the broadest sense meetings serve a useful purpose when they help to solve a problem, clarify a decision, or implement a program. This does not mean, however, that a meeting necessarily is the best managerial tool for handling these situations. Often a problem can be solved better by an individual working alone, and a decision or program can be clarified or implemented more effectively by a memorandum.

The decision the executive must make is not whether a conference can accomplish a particular task but whether it is the best managerial tool for the job. Too often the executive makes this decision hastily and is influenced in his thinking by past experiences with meetings. The question that might be asked is when, under what conditions, is a meeting a particularly desirable managerial tool? Here are some situations that should be considered.

1. *When information can be communicated in a group situation better than through any other media.*

Frequently a problem, decision, or program is of such a nature that its various aspects can be fully communicated only in a group situation. Unfortunately, too often this is not recognized and we find ourselves in a trap using a one- or two-way communication where the more we write the more questions are raised and the more questions we ask the more confused are the answers. Even oral face-to-face talks sometimes do not seem to help. There is strong evidence that to be understood some communications require discussion in a group where various facets of the communication may be identified, explored, and explained.

2. *When implementation by others is required.*

When implementation by others is re-

quired, it may not only be desirable to hold a meeting to clarify a decision or program, but it may be helpful to assemble the group to assist in making the decision or developing the program. It has been clearly established that people execute best that which they played a part in conceiving. Participation by subordinates in determining the solution to a problem gives them a vested interest in its execution. Obviously, committee problem solving is a time-consuming procedure. Many times one person can solve the problem more expeditiously. But when cooperation and close coordination are necessary in implementing the solution, it may be highly desirable to take additional time in the process of arriving at a decision or program, because by so doing, valuable time may be gained in achieving the objectives. This is a finely balanced matter which depends on the nature of the problems, the competence of the leader, and the maturity of the group.

3. *When contribution of others will help.*

When an executive feels that others in his organization have technical skills, knowledge, background, or special experiences which may supplement his knowledge, he might consider the advisability of bringing these individuals together in a committee to help him solve a particular problem. If their contribution will be helpful, a meeting may be highly desirable. The executive should, however, consider the feasibility of consulting with specific individuals before he assembles a group. If a committee is appointed, it is, of course, most important that the participants selected can contribute to the solution of the problem. Where the problem is of major importance to the organization, the executive might do well to assemble his key subordinates at least to check his decision. This is a situation where the cliché that "two heads are better than one," might well apply.

4. *When creative thinking by a number*

of persons may be helpful in solving a difficult problem.

Experiments in business, industry, and in the military services have demonstrated that new and bold ideas can be generated by a group attack upon a complex or vexing problem. The interaction between people that is developed in a meeting situation has been most stimulating and productive of rich ideas. Creative thought, however, can flourish only in a permissive climate and the meeting situation must be specially staged to produce desired results. A committee that is dominated by an autocratic leader will be sterile. It may work diligently at its task, but it will not dare to be imaginative.

There are many ways of inspiring a group to generate imaginative solutions to problems. It is truly remarkable how people are stimulated to creativity by ideas of others. The only requirement is that the leader encourage a permission positive thinking climate in the meeting situation. A lively creative session will not only produce valuable ideas but it is a healthy experience which will help the group to mature and work more effectively on its routine tasks.

Planning the Meeting

Research in group dynamics reveals that the most important single factor which determines the success of a meeting is the competence with which it is planned. Those executives who plan deliberately for a meeting are achieving results well-worth the additional time and effort required. Imaginative thinking will not only provide for the mechanics of the meeting but can have a great deal to do with the way the participants work. The administrative details regarding facilities, arrangements, scheduling of time, and discriminating notices may be accomplished by an assistant. The leader himself, however, must think through the basic problems. Here are four questions to which he should give careful consideration.

1. What are the objectives?

In planning a meeting, the most important function of the leader is to define clearly for himself and the group the objectives to be achieved. He should assure himself that these objectives are realistic, attainable, and compatible with the mission of the organization. If the objectives do not meet these criteria, he may find the group going around in circles trying to decide what to decide. If the meeting is called for the purpose of solving a specific problem, the leader would do well to examine the probable objectives that individual members of the group may have. He always should endeavor to isolate the major hidden agendas which may develop because these will have to be dealt with in order to ensure successful completion of the assigned tasks. Situations change continuously and the leader must be alert to these changes. Foolproof agendas cannot be prepared beforehand. In a group they are viewed through many eyes and should be modified as circumstances require.

2. Who should attend?

Meetings frequently fail to achieve their objectives because the wrong people are assembled. A good planner provides for the kind of interaction that is needed and includes all the resources required with the minimum number of people involved. In deciding who should attend, the planner should ask himself the following questions. Who has the needed facts? Who are the individuals with the good ideas? Whose support is essential for carrying out the objectives? Is an expert necessary for a presentation? Will the individuals selected work well together? With regard to the last question, there are important issues which must be faced squarely and it may be essential that the antagonists be brought together. The most intricate task may be well on its way to a successful solution if the right people are brought together and encouraged to exchange their views freely.

3. Do we have the necessary facts?

It would seem axiomatic that no decision would be made or action taken without first ascertaining the facts. But this is not so. Ill-founded decisions in meetings are so common that often it is difficult for the fact-centered participant to get a hearing from his colleagues. Frequently, if facts are not available, a group will sidestep the basic issue, talk about something else, or arrive at a compromise of what the facts are, and act on this compromise. This behavior seems to conform with research findings that when the need for analysis conflicts with the need for getting a job done, analysis is pushed aside. The planner can do much for the group in determining the facts which are required for an intelligent discussion and assigning appropriate individuals to bring these facts to the meeting.

4. How shall the meeting be conducted?

This question is not so much concerned with the mechanics of procedure as with an examination of the personal philosophy of the leader. There is no one satisfactory style of leadership. The nature of the task to be accomplished will determine how the leader should behave. This may vary from the permissive encouraging attitude of a democratic chairman in a problem-solving situation to the emotional laden exhortations in circumstances requiring inspirational leadership. The autocrat belligerently hammering on the table, squelching the slightest opposition or criticism, is no more effective than the kindly laissez-faire "go to it boys" leaderless approach. On the other hand, planning the leadership style to be used should not be an excuse for planning manipulation of the members of the group. The leader has the moral obligation to conduct the meeting in the balanced best interest of all concerned. The approach may be examined in terms of the following questions. Are we interested in solving a problem? Do I want new creative ideas? Do I want solid

conservative recommendations? Do I need the help of specific individuals to implement a decision or program? Do I want information on: procedures? organization? policy? Is this the occasion for an inspirational message?

Imaginative planning for a meeting will go a long way toward making it a success, but planning is no guarantee that the meeting will be productive. In the dynamic interaction of a meeting situation, sensitivity, awareness, and diagnostic skills of the leader and the participants play an important role in fashioning the productivity of the group.

Group Maintenance

We have fallen into the habit of expecting results by simply assembling several people into a meeting. If they fail to meet our expectation, the leader usually is condemned. If you are the unhappy leader who has chaired an ineffectual session, you have little difficulty in laying the blame for the failure on the stupidity of one or two gross members. And what is most satisfying, everyone agrees with you.

Yet literally all we have in the meeting is a collection of people. Groups do not spring forth full-blown by directive; they assume a character and existence all their own. They may work effectively and efficiently, or they may remain ineffective in accomplishing the task. Time and opportunity are required to permit the group to grow, to develop, and to mature. There is hardly a group which does not have points of weakness where it needs help. There is a great need in all groups for the leader and the members to possess sensitivity and diagnostic skills so that they may treat the underlying causes of these symptoms. This is a maintenance job that is needed to keep human relations healthy. It is a maintenance job every bit as important to the group as the maintenance that must be performed on airplanes, automobiles, and other physical machines. Unfortu-

nately, there is little awareness for the need of this type group maintenance.

Ruling a group with an iron hand, forcing a weak group to stay on its task, and disregarding hostilities and frustrations seldom have resulted in productivity. Usually, a leader who acts in this manner receives little help in the solution of his problems, finds implementation of his decisions and programs slow and ineffective, and has a feeling that the group is trying to run away from work.

Imaginative leadership, however, can create a climate where people want to work together and can do much to encourage the members to resolve their individual and group problems as they move forward orderly on their assigned task. A leader with awareness and human skills who approaches his job from a point of service to the group can channel conflicts into effective work.

On the other hand, a group cannot become fully productive until every member recognizes his responsibility for work on the assigned task and his responsibility for maintenance in the group. No leader could possibly, by himself, diagnose all the complex needs of the situation and he certainly could not deal with all the internal problems of the group. No one person alone could possibly perform all the task and maintenance functions which need to be done. A skilled leader can, however, develop a climate in which members will supplement his leadership in those areas where they have the capacity to make valuable contributions. The important factor in this concept of conducting a meeting is that the leader and the members should recognize the total leadership requirement as a responsibility of all the people within the group.

Conclusion

No one outside the group can improve its operational efficiency or teach it to become more effective. This improvement

and learning must come from within the group itself. As leaders and participants we must help the group to become conscious of what is happening in the meeting—to take a look inward upon itself. We must help the group to recognize that it is always working on two levels—its surface task and hidden agendas. We must assist the group to deal with the dynamics of conflicting individual behavior. We must contribute to the improvement of the process of communications. We must encourage the group to develop methods of evaluating its own procedures so that it may

grow in its capacity to get things done. But, most important, we must recognize that every meeting is a new human experience. It has its own dynamics and its own pattern of forces.

It is obvious that there is much we can learn about working with people in meeting situations. This is an art which can be acquired with practice. On the job we can improve our meetings by developing a sensitivity to other people, improving our ability to diagnose causes rather than symptoms of trouble, and by increasing awareness of our own behavior.

Future warfare, it is generally agreed, will stress the independent action of small, flexible, highly mobile, widely dispersed battle groups operating with the support, and under the threat, of nuclear weapons. Effective performance under these conditions will require soldiers who are emotionally stable, capable of handling and maintaining the most complex weapons and equipment, and capable of reacting swiftly to changes in battlefield conditions while under extreme stress. Army personnel research in this area holds promise of producing techniques by which potential combat leaders can be readily identified, as measured by the personal factors and special abilities required of the successful soldier on future battlefields.

We shall have no new breed of men to meet the challenge of the future. Nevertheless, we can and must demand that the modern soldier be a man of high quality, possessing aptitudes to master new and complex skills, the flexibility to adapt himself to new circumstances, and the physical stamina, strength of will, pride, integrity, and sense of discipline which will enable him to conduct himself to the credit of his country under trying circumstances.

The attraction and retention of this type of soldier is the primary personnel objective of the Army. His presence on the battle scene is our Nation's best assurance of victory in any war of the future.

Lieutenant General Donald P. Booth

AUSTERLITZ

A Clash of Command Systems

Doctor Leslie Anders
Assistant Professor of History, Central Missouri State College

A FEW miles east of the Moravian industrial center of Brünn the modern traveler crosses the Goldbach, a narrow stream which trickles along a shallow southerly course. Overlooking the Goldbach from the east is the Pratzen Plateau, a fir-studded eminence some five miles long that once impressed Hilaire Belloc as resembling "a stranded whale." Facing the plateau from the west bank is Schlapanitz Ridge, somewhat longer but not quite as high as Pratzen's 300-foot crest. Along a "saddle" to the north there runs the high road from Brünn to Olmütz. Small lakes and marshy patches abound in the lowlands where the Goldbach skirts the southern ends of the two ridges.

Probably very few of the present-day Czechoslovak farmers and workers passing along the road to Brünn realize the significance of the Goldbach in the military history of central Europe. Yet on the night of 1-2 December 1805 this little stream was a decisive dividing line between contrasting military traditions, doctrines, and command systems. Upon the armies facing each other across those muddy ripples the future of Europe's peace and order depended.

The Contestants Assemble

On 1 December 1805 an army of over 80,000 Austrians and Russians were encamped on Pratzen and its eastern slopes.

(See Figure 1.) Headquartered at Castle Austerlitz, six miles to the east, were the youthful Czar Alexander I of Russia and his ally Francis II, Holy Roman Emperor and ruler of the diverse Austrian dominions. Acting as their "Allied Supreme Commander" was the elderly and half-blind Russian General Mikhail Ilarionovich Kutuzov who had just completed six weeks of playing mouse with the Napoleonic cat along the Danube and in the hills north of Vienna. Knowing full well that the training and morale of his Russians left them poor matches for the toughened French veterans on a man-for-man basis, Kutuzov was not anxious for a pitched battle—just yet. His scheme was to lure Bonaparte deeper and deeper into central Europe while he waited for Prussia to enter the war by invading Bohemia, for Austrian reinforcements to come up from Italy, and for fresh Russian divisions to come through the Carpathians. Then, with the French surrounded and far from their bases, and with the numerical advantage heavily in his favor, Kutuzov would turn on Bonaparte and crush him.

Even now Kutuzov enjoyed a slight numerical preponderance along the Goldbach, but that margin of superiority was supplied by Austrian troops who were not highly regarded by Kutuzov.

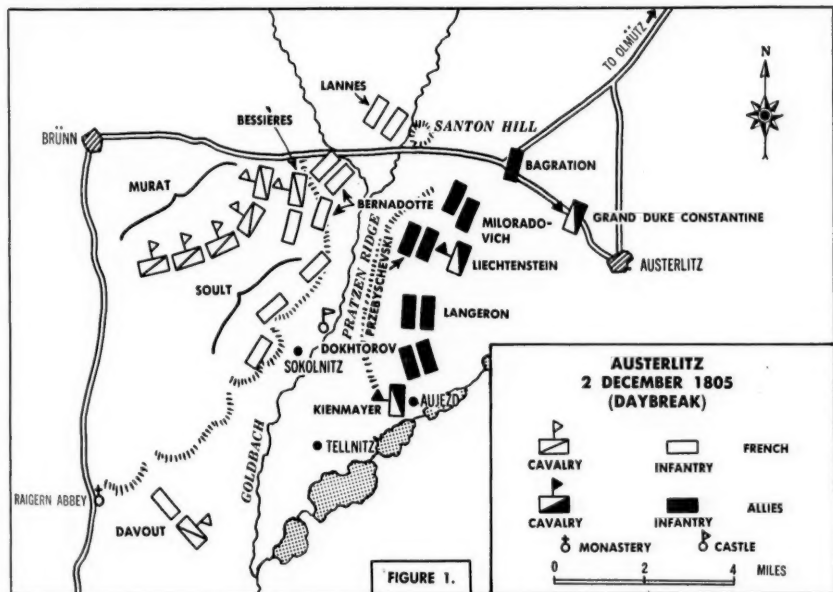
Of his 10 major subordinates, seven were in Russian uniform. Of these seven

The successful outcome of the Battle of Austerlitz for the French is a striking example of the vital necessity for unity of command, and vividly depicts the leadership and tactical ability of Napoleon

generals, however, only four were Russians. Besides the Pole, Przebyshevski, known as "Prishprish" to his irreverent Russian staff, there was the exiled French General Count Andraut de Langeron and the Baltic German General Friedrich von Buxhöwden. No one knew better than Kutuzov that this "allied" army under his orders was not so much a polished team as a collection of refugees cast up by the Napoleonic storm. Could he make a fighting machine overnight of Russians who

to encompass Bonaparte's ruin. The fact that Weyrother's strategic concoctions had misfired repeatedly in previous campaigns against Napoleon mattered little to the kaiser or the czar, who alike saw in this erudite charmer the one staff thinker they could trust.

As usual, Weyrother beheld the clouds and predicted sunshine. Noting that French reconnaissance squadrons were displaying a tendency to pull back from skirmishes between Brünn and Olmütz



took the Austrians for cowards and of Austrians who considered the Russians clods? Mikhail Ilarionovich hardly thought so.

The New Plan

Kutuzov would not have come to grips with the wily Corsican along the Goldbach had not the exuberant young czar fallen under the spell of a chairborne Austrian staff planner, one Colonel Weyrother. This special chief of staff detailed to the czar by his ally had developed a daring scheme

in the last days of November, Weyrother decided that Napoleon meant to fall back on Vienna by way of the road running from Brünn to Vienna. On the evening of 28 November the French emperor sent an aide with a compliment-strewn letter to the czar, and Weyrother "knew" that his assumption was correct. The next day the czar's aide, having returned the visit, reported the development of hasty fortifications along Schlapanitz Ridge. Napoleon was desperate; the two emperors agreed

with Weyrother. The hour to finish him had struck.

On 1 December the allies closed ranks on Pratzen. That night Weyrother gave the allied corps commanders a midnight briefing at Kutuzov's headquarters on the eastern slope of the plateau. "He was like a professor reading a lecture to young students," Langeron complained in his memoirs. "Perhaps we really were students, but he was far from a clever schoolmaster." The plan was simple—on Wey-

the southern fringe of Schlapanitz Ridge. Approximately 25,000 Austrian and Russian infantrymen, stationed behind Pratzen under the Russian General Mikhail A. Miloradovich, then were to move up over Pratzen to exploit Buxhöwden's breakthrough. On the right, General Peter I. Bagration's infantry corps and Grand Duke Constantine's mounted Imperial Guard were to move down the road toward Brunn to maintain the pressure on Bonaparte's left. Prince John of Liechtenstein,

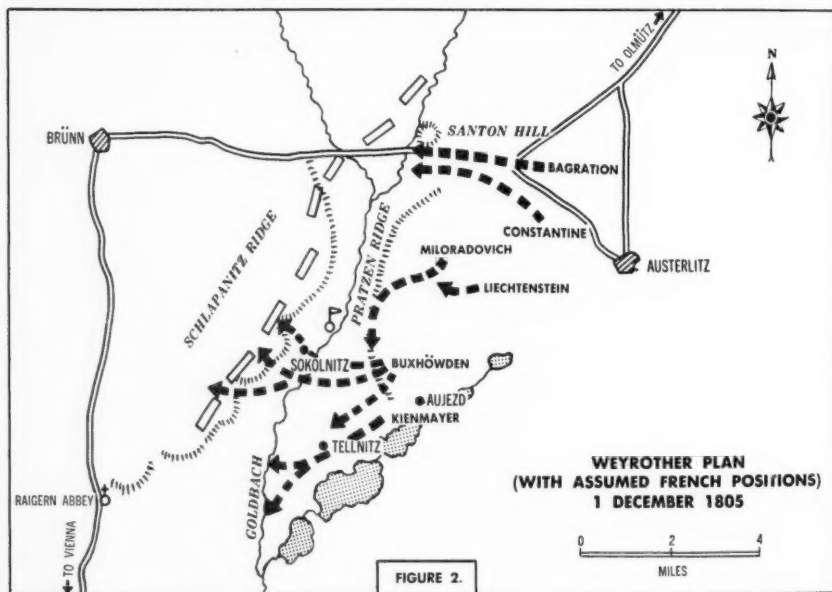


FIGURE 2.

rother's map. The Austrian cavalry under Baron Michael von Kienmayer would sweep past the south end of Pratzen, secure Tellnitz, and guard the lower Goldbach against any French troops lurking in the vicinity of Raigern Abbey. Under Buxhöwden's direction about 23,000 Russian infantrymen under Generals Dokhtorov, Langeron, and Przebyshevski would march down the south face of Pratzen, cross the Goldbach, cut the road to Vienna, and roll up Napoleon's right flank along

commanding 10,000 Austrian cavalrymen, was to move up on the northern end of Pratzen to stand guard over the weakened allied center. (See Figure 2.)

If successful, this maneuver would cut off Bonaparte from his retreat to Vienna. He would have to move westward and northward into Bohemia, where, as the czar's diplomats were certain, the Prussian Army would soon be lying in wait for him.

Kutuzov, having fallen asleep at the

start of the lecture, passed judgment on the Weyrother plan with his snores. Miloradovich, Buxhöwden, and "Prishprish" stared glumly, first at Weyrother and then at his map. Only the volatile Langeron would dare to defy Weyrother. If Bonaparte stood still, Langeron agreed, the operation would be feasible. But what if he shifted, or worse, attacked? "Not a chance," the Austrian scoffed. "If he could have attacked us, he would have done so today."

Langeron was insistent. Bonaparte was too clever to remain on Schlapanitz so long if he did not plan to attack. Already the campfires west of the Goldbach had gone out, and silence reigned over there. Weyrother yawned. "He is either retiring or changing positions," he said. Sure that there were less than 40,000 French on duty, Weyrother had no doubt that Bonaparte's situation was fundamentally helpless.

Bonaparte Wide Awake

With nearly 70,000 of his tested veterans on hand, the French emperor was in no mood to wait quietly for Weyrother's surgery. Carefully concealed from the self-deluded and dissension-ridden allied high command were two brutally decisive elements in the situation. First, in the words of Sir Walter Scott, there was Napoleon's "alertness of mind necessary to penetrate into and oppose the designs of his adversary." Second, in the evergreen woods west of the Goldbach a typically Napo-

leonic deployment had taken place: a screen of infantry divisions stretching northward from Raigern Abbey and across the highway to Santon Hill; behind this screen, a reserve of cavalry and infantry held back as a "Sunday punch" for use in the decisive hour.

The Austrian and Russian commanders apparently never suspected that Bonaparte had been trying for a week to trick them into a premature offensive in which he could smash their elusive forces, put an end to Kutuzov's protracted game of hit and run, and go into winter quarters. Why else had his outlying squadrons behaved with such timidity the past few days? Why else had he sent that page of sweet nothings for Alexander's eyes? Why else had his engineers put on that act of frantic but aimless digging when the czar's secretary visited Napoleon on 29 November? The human capacity for self-deception has a strength seldom appreciated.

Expecting a cavalry showdown along the road north of Pratzen, Bonaparte made an artillery strong point of Santon Hill and stationed Marshal Jean Lannes' corps of infantry around the crossing of the Goldbach below Santon. The cavalry corps under Marshal Joachim Murat waited patiently by the northwest slopes of Schlapanitz Ridge. Marshal Jean Baptiste Bernadotte's corps of infantry was in bivouac as part of the general reserve, around the Emperor's headquarters tent between Schlapanitz and Santon. Marshal Jean Baptiste Bessières' Imperial Guard also was in the 25,000-man reserve.

Marshal Nicolas Soult's oversize infantry corps, holding the main part of the ridge, comprised the French center. Marshal Louis Nicolas Davout's mixed force of infantry and cavalry moved up during the night to take up a right flank position in the neighborhood of Raigern Abbey.

The French plan was counteroffensive in concept. Certain that the allies meant

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to attack him here and now, Napoleon was equally determined to land a telling counterpunch. For assaulting those stubborn Russian infantry divisions a special tactic was in order. French regiments should advance brigaded, with the leading regiment in skirmishing formation, and the support regiment coming up in a column of battalions. Cavalry squadrons would stay nearby to chase Cossacks and force Russian infantry to concentrate, thereby providing profitable targets for French firepower. Underlying all special planning, it must be emphasized, was Bonaparte's firm resolve to watch patiently for an opening—and then unleash a fatal thunderbolt. By sundown 1 December every French battalion commander was briefed on the plan. What a contrast to the ponderous staff work beyond Pratzen which provided every corps commander a copy of the Weyrother plan at 0800 on 2 December, *one hour after the allied advance began.*

Buxhöwden at High Tide

The temperature stood just below the freezing mark when Napoleon emerged from his tent at 0400 and joined the marshals for a last survey of the situation along the Goldbach. The skies still were clouded over, and a thick ground fog obscured the lowlands. Pratzen and Santon, as Louis Adolphe Thiers put it, rose "above the mists like islands out of the sea." Close scrutiny of Pratzen disclosed that Russian campfires were nearly extinguished. From the fog-covered slopes to the south came the unmistakable sounds of Buxhöwden's cavalry and artillery on the move. The Emperor quietly passed the command to Soult, and the French center divisions began slipping down into the fog along the Goldbach to await further orders.

Buxhöwden's attack began at 0700, with Kienmayer's horsemen leading the charge. Within the hour Kienmayer and Dokhtorov were masters of Telnitz, having driven

Davout's skirmishers back to the Goldbach. Langeron was not so lucky in jumping off, for when he commenced his southward march he discovered Liechtenstein's cavalry standing on the summit in his line of advance. While Langeron marked time, aides scurried about to arrange Liechtenstein's withdrawal. Liechtenstein's mistake soon was repaired, and his troops subsequently conducted to their assigned position at the north end of the ridge. Langeron and Przebyshevski then were able by 0900 to march down from Pratzen, lunge across the Goldbach, and wrest Castle Sokolnitz from Soult's right division. Holding the castle and trading punches with Soult and Davout along the brook, Buxhöwden could feel at this hour that his share in the Weyrother plan was in good shape.

The Counterstroke

Until around 0800 Napoleon's view of the field remained dimmed by the leaden overcast above and the fog below. Then, providentially, the rays of the rising sun broke through the clouds behind Pratzen. What the Emperor had hitherto suspected, he could now verify. The plateau, the solar plexus of the Austrian-Russian front, was deserted. If French troops could seize those heights, Buxhöwden's turning movement could be converted easily into an allied disaster of the first magnitude.

The Emperor's sharp eyes studied a deep ravine leading to the summit of Pratzen. Infantry scrambling up that ravine could do so virtually undetected until it burst forth on the plateau. "Soult!" Napoleon barked, "how long will it take your men to reach the summit?"

"Twenty minutes," responded Soult, ready to spring to saddle. But since Napoleon wanted to have Buxhöwden deeper in the trap, it was still another 20 minutes before Soult galloped off to carry the fateful order to his corps. Not long after 0900 Soult's divisions were splashing across the Goldbach and scaling Pratzen's face. Soon

the French were atop the plateau and grappling with Miloradovich's Austrian corps, which had just begun to move up to execute its part of the plan. (See Figure 3.)

Miloradovich might have been on Pratzen more promptly had it not been for a time-consuming argument between the czar and Kutuzov. Although unaware of Soult's impending appearance, the czar felt that Kutuzov should get Miloradovich

plateau swarming with French infantry. Soult's right division unmasked a 12-piece artillery battery at pointblank range, and the confusion began. The left French division charged Miloradovich with bayonets fixed, and a general Austro-Russian retreat ensued. The horrified czar and kaiser tried vainly and briefly to stem the rout, but their efforts seemed only to feed the flames of panic. It was 1000 when a blood-spattered aide galloped up to

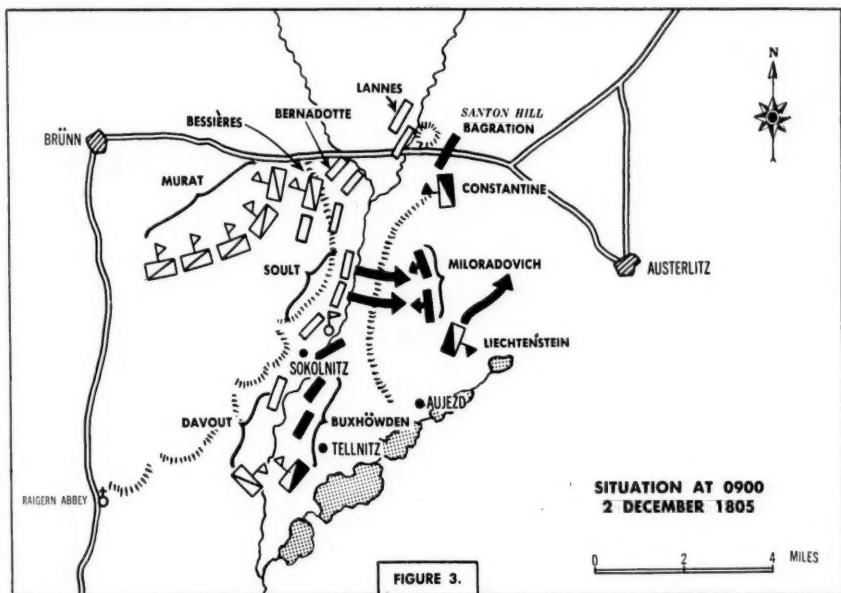


FIGURE 3.

moving. To the sarcastic reminder that Kutuzov was not supervising a birthday review for the Empress, the churlish old soldier had retorted with more than equal choler that it was "precisely because this is not a review that I am waiting."

While the czar said no more, Fletcher Pratt writes that he stared at Kutuzov with "that bright, fixed, and peculiarly dreadful smile which only an autocrat master of life and death can wear."

Miloradovich's Austrians and Russians were, to put it mildly, shocked to find the

Napoleon's command post to report the conquest of Pratzen.

Kutuzov Muffs a Chance

If Kutuzov's abilities had exceeded "great astuteness disguised by great indolence," as Thiers says, this was the hour he would have recalled Buxhöwden's columns from the Goldbach to organize the recapture of the plateau. Having done so, Kutuzov would either have retrieved the keystone of his front or be in a position to retire with fairly intact forces toward

Olmütz and the Carpathians. However, unable to summon that much breadth of strategic vision, he called up only about 8,000 of the Imperial Guard infantrymen. While the guards were suffering frightful losses before Soult's muskets and artillery, Bonaparte was moving Bernadotte's corps and Marshal Nicolas Oudinot's grenadier division to Soult's support—about 20,000 men in all.

Along the Brünn road Kutuzov also was

fore, when the decision on Pratzen was assured, he ordered the massed cavalry of Murat's corps and Bessières' Imperial Guard to proceed to Lannes' relief. It was around 1030 that Liechtenstein arrived to join Bagration and Constantine for one do or die thrust at Lannes. Time had run out, however, for Liechtenstein was coming up just in time to meet Bessières and Murat as they thundered down the road upon the hapless Russians. Liechtenstein

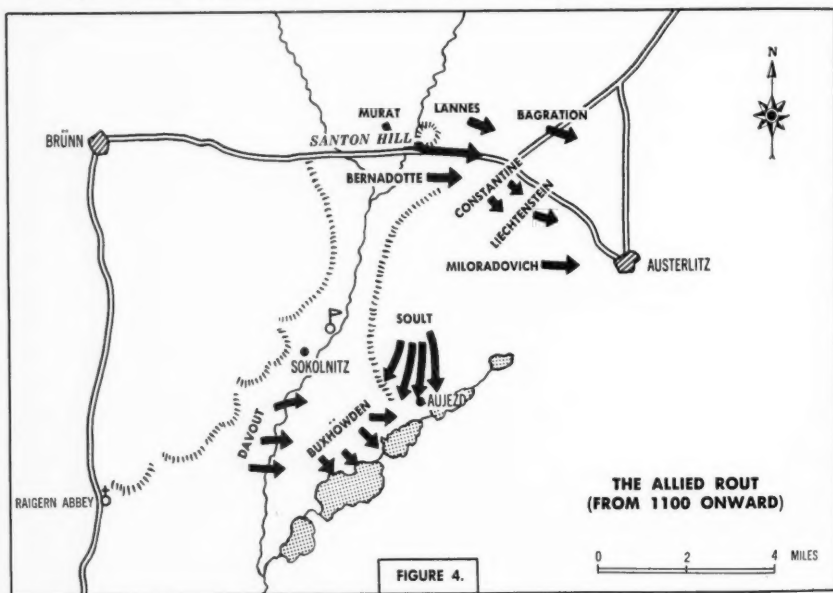


FIGURE 4.

trying to land his right hook. While the fight for Pratzen was going on, Bagration and Constantine had been trying vainly to capture Santon, cross the Goldbach, and drive in the French left. Hard pressed by the Russian infantry-cavalry attack, Lannes, nevertheless, held on to the left as valiantly as Davout had to the right, confident that his imperial master would fashion his salvation before the pressure grew unbearable.

Napoleon was indeed watching the pitched battle along the highway. There-

was able only to flee with the wreckage of the allied right.

Decision by the Lakes

Soon after 1100 the curtain went up on the final act of the tragedy of Austerlitz. A seesaw struggle had been in progress for over three hours between Buxhöwden and Davout in the areas around Sokolnitz and Telnitz. It now came to a fast decision as Soult and Oudinot swept down Pratzen on the exposed rear of the Austro-Russian flanking columns. (See Figure 4.)

Buxhöwden frantically thought of escaping to the east through Auejzd, the maneuver that Kutuzov might well have ordered an hour previously.

Whatever the cause of Buxhöwden's indecisiveness, it was not long before he concluded that each commander should save his troops as best he could. Some Russians broke out toward Austerlitz before Soult plugged the escape hatch at Auejzd. After that it was a question of bolting to safety southward across the string of lakes. Austrian and Russian troops began to stampede over an earthen causeway between two lakes east of Tellnitz.

Perfectly aware of Buxhöwden's extremity, Napoleon ordered Soult's artillery to lay down an interdicting barrage on the causeway. The allied casualties mounted, as horses and artillery floundered in the thawing clay between the lakes. Terrified Russians, seeking to bypass the area of the barrage, rushed out on the thinly frozen lake surface, only to break through the ice and drown by the hundreds.

It was nearly twilight before the din of battle faded away to the south. With the remnants of their commands, Dokhtov and Kienmayer stolidly covered the retreat of the allied left as best they could. Przybyshevski's troops and most of Langeron's laid down their arms north of Tellnitz in the late afternoon. In fact, "Prishprish" and Langeron handed over their swords at Sokolnitz Castle and became prisoners.

Conclusion

At a cost of 10,000 dead and wounded, Bonaparte had wrecked the allied army and brought an unpromising campaign to a brilliant conclusion. The allies had left almost 30,000 men on the field of Austerlitz, including 12,000 prisoners. Moreover, the precipitate flight of the two eastern emperors and their troops left the French soldiery the pick of the allied baggage, rations, and ammunition. About 180 Rus-

sian and Austrian cannons were abandoned, although 30 of them had to be dredged from the lakes. Symbolically, Napoleon moved his headquarters to Austerlitz.

The allied will to keep up the fight was at a low ebb on the morrow of this victory that Napoleon would come to regard as his masterpiece. Prussia, on the verge of joining the allies, hastily chose the course of prudence. The Austrians quit the war the day after Christmas, leaving Kutuzov to march his Russians homeward across the Carpathians.

In analyzing the causes of this cataclysmic outcome of the allied scheme, one is struck by the contrasts between the contending forces. To the east of the Goldbach one beheld national jealousies, spotty training, and divided counsel. To the west was a field-tested army of one national mind and cultural persuasion, commanded by a team of young and vigorous marshals animated by a common tactical doctrine and long used to campaigning together.

Attention must eventually be fixed on the pinnacle of command and responsibility. Kutuzov's murky plans for a delaying action were in Czartoryski's view correct. "The right course was to wear out the enemy by means of skirmishes, always keeping the bulk of the army beyond his reach," the prince wrote from the depth of his hindsight in April 1806. However, Kutuzov's command powers and strategic vision were eclipsed in the presence of two imperial autocrats. Charged with responsibility exceeding his authority, Kutuzov was, therefore, obliged to compete with an intellect innately broader than his own and circumscribed by no higher and contrary human will. The conclusion would seem inescapable that the victory at Austerlitz went to superior intellect, efficient command principles, and effective teamwork.

KEEPING PACE WITH THE FUTURE--

Armor's Role on the Atomic Team

Colonel Maxwell A. Tincher, *Armor*
Faculty, U. S. Army Command and General Staff College

Let those who fear the fury of atomic blows remember that the safest place for a unit on any battlefield is the command post of the enemy! And we won't get there by thinking now in terms of defensive killing zones or any other concept predicated solely upon defensive use of our offensive capabilities. The quickest way to get anywhere is to go! The victorious army of the future will not be a rapier employed in delicate thrust and parry. It will be a mailed fist driven at the heart of the enemy.

—General Willard G. Wyman
Commanding General, US CONARC

This is the eighth in a series of articles expanding various aspects of "USA Command and General Staff College Keeps Pace With the Future," written by Major General Lionel C. McGarr, USA, Commandant of the College, and published in the April 1957 issue of the MILITARY REVIEW.—Editor.

ATOMIC war means many things to many people. To the uninitiated it dons the unknown and ominous cloak of chaos and death; to some it represents combat power of tremendous magnitude and when coupled with rapid maneuver constitutes the soul of the optimum military efficiency index; and yet, to others it is simply the current ultimate of firepower. To armor, as an essential ingredient of the combined-arms team, it enhances, complements, and supplements its inherent and inseparable characteristics of mobility, firepower, and shock action.

The role of armor plays an important part in the over-all College mission of developing commanders and staff officers capable of employing all elements of the combined-arms and services team of the Army in the field

Modern warfare, encompassing nuclear fires, electronic warfare, chemical and biological warfare with advanced, revolutionary technological means, or the more selective use of force in limited war, demands one essential ingredient for survival—mobility; mobility of means, actions, and mind. The one-two punch of a nuclear kill followed with an armor thrust provides the combined-arms commander with a powerful means for success in modern battle. On the atomic battlefield, characterized by greater depths and breadth with widely dispersed hard striking mobile task forces operating over extended distances in conjunction with air-mobile forces, backed by highly mobile air logistical support elements, armor will play a vital role.

Mission

The mission of the Department of the Armored Division of the U. S. Army Command and General Staff College is to provide a sound modern doctrinal basis of

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armored instruction and to ensure that graduates thoroughly understand and are capable of employing armor as an essential element of the ground team in any environment of warfare, in any locale, and under any component of the spectrum of variations that comprise the modern and future battlefield as conditions may dictate. This mission is an essential part of the over-all College mission of developing commanders and staff officers who are fully capable of employing all elements of the combined-arms and services team of the Army in the field.

Organization

The development and maintenance of a sound instructional and doctrinal basis for armored instruction requires an efficient organization and close coordination with other resident departments of the College to ensure an effective correlated accomplishment of the over-all mission of the College. The functional department organization of the College, instituted by the Commandant in 1957, materially assists in the formulation of realistic and effective doctrine and instructional material, ensures timely and selective research and study in the department's assigned functional area, and permits objective concentration to bring about modern, progressive, and forward-looking doctrinal and instructional products.

The new College organization placed the responsibility for doctrine and in-

struction pertaining to the armored division on departmental level by creating the Department of the Armored Division and provided it full representation on the Faculty Board. In addition, in the reorganization of the College instruction devoted to armored division was increased by approximately 50 percent. Further emphasis was given to armored division instruction in that the hours allocated are devoted purely to armored division instruction; whereas, in the other divisional departments a considerable portion of hours are devoted to basic instruction common to all divisions and to higher level instruction. The Department of the Armored Division devotes its entire course of study to the development of a fundamental understanding of the capabilities and doctrine of the armored division in present and future war and its place in the over-all atomic missile age ground team (see figure). This functional area assigned to the Department of the Armored Division is so compact and interrelated that the department requires no sectional organization; however, the department does have a doctrinal element which has primary responsibility for implementing the department's doctrinal function.

Curriculum Planning

In November 1957 the Department of the Armored Division began the development of its 1958-59 (/9) course of study. Preliminary planning was initiated early through information obtained by the department's representative on the Commandant's /9 Curriculum Planning Board. This board submitted recommendations to the Commandant upon which his /9 Curriculum Guidance and Decisions were based as indicated in a previous article of this series.¹

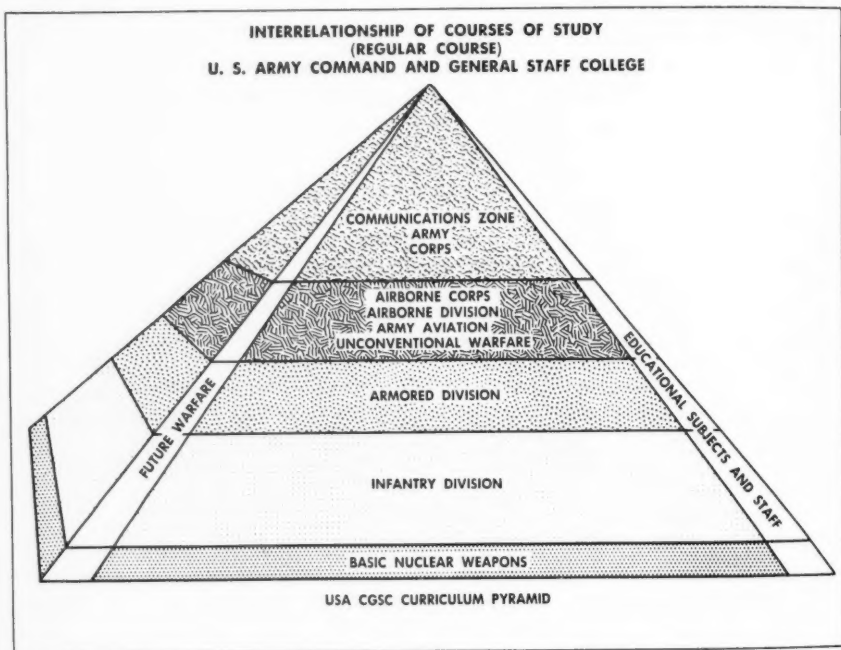
On 15 November 1957 the Commandant issued the 1958-59 Curriculum Guidance and Decisions on the /9 Curriculum. This

Colonel Maxwell A. Tincer was graduated from the United States Military Academy in 1937 and the U. S. Army Command and General Staff College in 1951. During World War II he commanded the 899th Tank Destroyer Battalion in North Africa, Italy, and in the invasion of France and Germany. Other assignments include staff duties with Headquarters, USEUCOM and as commanding officer, 14th Armored Cavalry Regiment, during 1954-55. He was assigned to the faculty of USA CGSC in 1955 where he is Director of the Department of the Armored Division.

¹ "Keeping Pace With the Future—Resident Instruction at USA CGSC." Colonel James L. Frink Jr., *Military Review*, February 1958.

document provided the necessary command policy guidance for establishing the basic framework for the development of the Armored Division Course of Study. This guidance directed that the course of study of the Department of the Armored Division emphasize the vital role of armor in the combined-arms team, embrace all types armored operations within varied environments, locales, and forms and

to include conditions and situations which are not ideal for normal armored operations. Armored division instruction will also be realistically set in the corps and field army framework to facilitate learning and to promote homogeneity with later corps and army level instruction. Based on the complete rewrite of the Armored Division Course of Study accomplished in the previous year, the 1958-59 rewrite



phases of war, including appropriate emphasis on limited war, and provide the essential nucleus for the instruction, common to infantry, airborne, and armored divisions, in tactical operations for which mechanized, highly mobile forces are particularly well-suited. Guidance provided the department called for appropriate instruction in the use of armor in environments which realistically portray the vicissitudes of the modern atomic battlefield

will, of course, be a normal corrective rewrite and refinement.

The preparation of a thoroughly modern up-to-date armor course of instruction necessitated a detailed analysis and evaluation of all critical factors involved including:

Advances in technological means, particularly in the fields of armor, atomic weapons systems, combat surveillance and target acquisition, improved mobility and

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correlation of these critical elements to the use of the armored division on the atomic battlefield.

Experience gained from the presentation of the 1957-58 course of instruction.

Impact of maneuvers, tests, and field exercises on new doctrinal concepts.

The basic philosophy used in the formulation of the Department of the Armored Division /9 curriculum is to ensure the creation of a thoroughly adequate foundation in armored division operations, portraying armor in its likely roles for all types of operations, and for all phases of a war. It is the responsibility of the College to foster the same degree of progressive modernization of armor to cope with the accelerated pace necessary for success on the atomic age battlefield that is occurring throughout the Army in the field. The traditional role of armor, as the exploiting force of the commander, must be continuously examined, refined, and reintegrated with new conditions to ensure the accomplishment of the multiple and complex tasks required in the atomic missile era. A thorough knowledge and adequate understanding of the full capabilities and limitations of this vital tool of the commander, to include its attributes of living on the radioactive fields of the atomic battle area, must be known by potential armored division commanders and staff officers. Equal or even more important, this instruction, together with other College instruction, must produce future higher level commanders and staff officers capable of fully integrating the armored division and other armor elements into the corps and field army combined-arms and services team.

Design of the Course of Study

The Department of the Armored Division Course of Study is designed to be modern in content and to emphasize those elements of modern warfare which particularly affect armored operations. In designing the Department of the Armored

Division Course of Study consideration is given to the knowledge that the student possesses when he begins his study of the armored division. Prior to his arrival at the U. S. Army Command and General Staff College, he has from experience become generally familiar with armor primarily as a result of his advanced course of instruction received at a branch school. As a part of his advanced packet material the student is furnished information with regard to the organization and general employment of the Pentomic Divisions. Early in his USA CGSC studies he receives over-all orientation on the Army in the field, basic nuclear weapons instruction, basic staff instruction, and is indoctrinated in the basic organization, missions, and functioning of the Pentomic Infantry Division. Building upon this firm foundation he then begins his study of the reorganized armored division (see figure).

The entire armored course of study is designed to enhance and foster student reasoning and decision-making ability, character, self-expression, and ability to use the armored component of the combined-arms team. Further, the course design causes the student to recognize the need for new forward-looking doctrine and to improve his abilities to facilitate its development. The basic objectives involved in the development of this course of study are to ensure that the student is able to recognize problem areas, determine the basic issues involved, obtain the necessary information for solution, to arrive at a sound logical solution or decision, to communicate this decision with clarity and facility. These objectives also require that the student be instructed in the requirement for supervising operations to ensure proper execution. The design of this course of study includes appropriate emphasis by integration throughout the instruction in those areas requiring stress in future modern war, in addition to specific future instruction in a future time-

frame. These include but are not limited to missiles, CBR, unconventional warfare, night operations, and the mobile forces concept. The course of study emphasizes atomic warfare instruction; however, *it is carefully designed to develop* "equal student facility" in atomic and nonatomic warfare. Due to the growing importance of limited war, emphasis was placed on this subject in the 1957-58 course of study and has been further increased in the 1958-59 course of study. The nucleus for the course of study is current approved US CONARC and Department of the Army doctrine. Interim doctrine and new concepts, carefully identified as such, also are employed as authorized and encouraged by US CONARC. Student learning of armored operations is reinforced by extensive instruction on corps and field army operations as presented by the Department of Larger Units and Administrative Support (see figure).

The Department of the Armored Division Course of Study is divided into three phases: familiarization, application, and advanced application. To ensure a thorough grounding of students in armored instruction, the factors involved in each of these phases are carefully balanced. Strategic settings for the subjects within each phase are carefully developed. Locales are selected to ensure the student is provided varied climate and terrain conditions on a worldwide basis to include areas that are far from ideal for armored operations. The difficult, the unusual, and the different is often stressed as an integral part of advanced units of instruction to foster the capability of the student to adapt himself rapidly to adverse operational environments.

Throughout each phase of instruction presented by the department, administrative support (logistics, personnel, and CAMG), organizations, doctrine, techniques, and procedures are integrated with tactical operations to ensure strong

coverage of this critical aspect of armored operations and to stress the essential correlation and coordination required between tactical and administrative support operations. In addition, at the outset of the course of study separate fundamental subjects which deal exclusively with administrative support of armored operations are presented, including the organization procedures and methods of coordination of administrative operations. The student is constantly made aware that the combat power of armor is completely dependent on logistical effectiveness and that the development of tactical operations must be effected "hand in hand" with logistical planning and operations. This vital aspect of armored operations has been given a further significant increase in instructional hours over the previous year.

In the *familiarization phase* of the course of study the student learns the fundamentals of organization, capabilities, limitations, and operations to include administrative support of the armored division. The primary purpose of this introductory block is to provide the student with a thorough and well-rounded foundation with regard to armored division operations as a vital element of the atomic combined-arms team. The knowledge thus attained is later applied, refined, and increased in the application and advanced application phase of instruction, as well as in courses of study of other departments. The familiarization phase also provides the student with an extensive and forward-looking doctrinal basis for armored operations.

The *application phase* of instruction of the Department of the Armored Division Course of Study casts the student in the role of a commander or general staff officer of an armored division in tactical situations encompassing varying degrees of operational environments and in many different locales. The fundamentals and

techniques involved in the employment of armor are applied under a sampling of situations designed to emphasize the "why." This approach is employed on subjects involving offense, defense, and various special types of tactical operations. The development of reasoning ability and adroitness to make timely and sound decisions is stressed. Problems are designed to require prompt action and to demand decision on the part of the student. Individual decisions and reasoning are emphasized rather than adherence to the merits of any single rigid solution.

The application phase of instruction serves as a vehicle for the student to assimilate the principles, techniques, and procedures required in armored division offensive and defensive operations to include: detailed consideration of the administrative support aspects of each type operation, rapid movement to the line of departure, attack through friendly infantry, exploitation, compress and destroy tactics, infiltration tactics, mobile defense, retrograde, airborne link-up techniques, and other selected tactical maneuvers.

The *advance application phase* of instruction incorporates complex tactical and administrative support problems under varying degrees of operational environments in different locales. Here the student is exposed to the multiple complicated command and staff problems that denote the complex atomic age battlefield. Selected aspects of modern warfare to include electronic warfare, unconventional warfare, combat surveillance and target acquisition, mobility, combat deception, radiological fallout, chemical and biological warfare, damage control, and rear area security are given additional emphasis as an integral part of the subjects presented. Particular emphasis is given to the necessity for effective streamlining and progressive improvement of techniques and procedures involved in the coordination of tactical operations and the

coordination of administrative support operations. All appropriate selected doctrinal areas of instruction are coordinated in detail with other departments and agencies of the College to ensure consistency and completeness of instruction. Included in the advance application phase is instruction on future armored warfare encompassing organization and equipment under study and new tactical and logistical concepts for the optimum employment of armor under future conditions.

The Department of the Armored Division phases of instruction are essential building blocks in the over-all College curriculum. These building blocks assist materially in ensuring a firm foundation for the future staff officer and commander and serve as an essential stepping stone to his progressive education toward effective employment of all means available to the modern atomic army. It is imperative that the College train officers who are thoroughly qualified in all arms. Modern warfare requires a knowledge of the employment of armor as an element of the ground team, a realistic understanding of the need for greater cooperation between armor and other branches, including infantry and airborne, on the modern battlefield, and a thorough comprehension of the limitations and capabilities of armor. Armor must be fully prepared to engage in many types of combat operations as the situations may dictate in addition to its classical exploitation role.

The methods of instruction to be employed are considered concurrently with the preparation of the course of study. A variety of techniques and classroom procedures is employed to stimulate student interest and enthusiasm, and to assist student learning.² The student is cast in the role of commander or general staff officer as appropriate. Through rotation of such assignments experience in each of the

² "Keeping Pace With the Future—Methods for Teaching Officers to Think." Ivan J. Birrer, Ph.D., *Military Review*, July 1957.

several fields is provided and an understanding of the interrelationship of the several staff sections is developed. Small group discussions, used when appropriate, permit students to exchange ideas, to show experiences, and to perfect their conference leadership abilities.

Doctrinal Mission

The U. S. Army Command and General Staff College is assigned the responsibility for the development of current and future doctrine for the armored division by current Army Regulations. Within the College the Department of the Armored Division is charged with the formulation of current and, in conjunction with the Department of Combat Developments, future doctrine pertaining to the armored division. Within the department a Doctrinal Element consisting of selected officers are assigned full-time doctrinal duties and are responsible for the initiation of armored doctrine within the guidance and instructions furnished by the College and Department Director. In addition, all author-instructors in the department participate in the writing and development of training literature.

Field Manual 17-100, *The Armored Division*, has been completely revised to reflect the role of armor on the modern battlefield, both atomic and nonatomic. This manual constitutes the primary doctrinal basis for current instruction. As an adjunct to the department's responsibility for the initiation and preparation of doctrine pertaining to armored operations, the Department of the Armored Division participates within its functional area in the College mission of review and supervision of doctrine developed by agencies outside the College to include, in conjunction with the Department of Combat Developments, future concepts. In addition, the department monitors instruction presented by other departments in which armored units are employed to ensure a coordinated and consistent effort and to

prevent duplication, contradiction, and gaps. In its role of monitoring armored instruction throughout the College to include nonresident instruction, the Department of the Armored Division, through doctrinal points of contact in selected doctrinal areas, provides assistance and recommendations to author-instructors in the College on armored doctrine. On all doctrinal matters the Department of the Armored Division maintains close liaison with the Assistant to the Assistant Commandant for Doctrine.

It is axiomatic that forward-looking, sound training literature can only result from a carefully planned, systematic, and detailed research and study program, coupled with effective coordination, particularly with the combat development agencies. Based on the College guidance and instructions emanating from the Assistant to the Assistant Commandant for Doctrine, doctrinal projects are assigned with careful timephasing to ensure their results are integrated, when approved, into current units of instruction.

Continuous development of doctrine requires a thorough knowledge of research and development projects, timephasing of military hardware, projected field tests, and effective liaison with agencies within and outside the College. The caliber of instruction and the quality of its product are only as good as the effectiveness and thoroughness of doctrinal development. An evaluation of the future battlefield foretells many radical changes of techniques and concepts. There is a continuing requirement for developmental thinking on organizational, operational, and matériel development of armor for the future. Of particular importance is the development of matériel and operational concepts that will enhance the strategic mobility of armor. In addition, the matériel, techniques, and tactics required to maximize the employment of armor, considering current and future families of

antitank weapons, including shaped charge weapons, gun type, and missiles, requires continuous appraisal to include the relatively increased lethality of such weapons.

Coordination

To present well-rounded and unified instruction close coordination within the College is required. The fundamental methods of achieving this coordination were outlined in a previous article, in the application of which the Department of the Armored Division provides assistance and advice to other departments in those subject areas for which it has fundamental responsibility.³ Conversely, this department to present well-rounded and balanced instruction, particularly as to the role of armor as a part of the over-all atomic ground force team, must effect appropriate coordination with other departments in those areas for which they have fundamental responsibility. This coordination is accomplished initially on the author-instructor level supplemented by appropriate representation of the departments concerned at department reviews of the subject. The department prepares doctrinal concept papers on key areas of armored operations which are of importance to the College as a whole, in order to ensure a sound foundation for instruction and progressive development of training literature within the College. These concept papers indicate to author-instructors the doctrinal basis and suggest ways and means by which applicatory instruction involving armored operations can be most effectively presented in units of instruction. The department maintains a master digest of armor instruction presented by all departments of the College in order to assist in making appropriate recommendations to the Assistant to the Assistant Commandant for Resident Instruction for a well-rounded, coordinated instructional program.

Coordination is also accomplished with

the Assistant to the Assistant Commandant for Resident Instruction through a close working relationship with their staff officer who has liaison responsibility with the department. Department reviews, particularly those involving the evaluation program and/or major changes, are attended by this liaison officer. Frequently, this officer is invited to be present during the initial briefing on new subjects by the author-instructor to the Department Director. In the preparation of subjects detailed coordination is accomplished to ensure an effective product and to prevent false starts. Liaison with regard to strategic settings and the over-all operational environment and general situations portrayed is effected with the Assistant to the Assistant Commandant for Doctrine, who has responsibility for coordination of the development of doctrine throughout the College. Coordination is also carried out with the Department of Nonresident Instruction whenever subjects of the Department of the Armored Division are used for nonresident instruction.

Preparation of Instruction

The functional organization of the College permits maximum decentralization and maximum use of initiative on the part of Department Directors yet ensures effective over-all control to bring about a composite unity of effort. College level control established to develop a properly balanced curriculum and effective, forward-looking instruction has been explained in detail in previous articles of this series.⁴ Within the department the concept of controlled decentralization is obtained by allowing the author-instructor wide latitude in the development of his subject. This practice fostered self-confidence during the preparation of /8 subjects and will act as a catalytic agent for the author-instructor with regard to

³ Frink, *op. cit.*

⁴ Frink, *op. cit.*, and "Keeping Pace With the Future—Development of Doctrine at USA CGSC," Colonels Victor W. Hobson, Jr., and Oliver G. Kinney, *Military Review*, November 1957.

energy, initiative, and display of individual talents in preparation of the /9 course.

Each subject of the department's course of study is assigned to an individual author who is consulted and voices his recommendations from the onset. Based upon definitive yet nonrestrictive guidance the author prepares the draft Department Directive. The Department Directive includes the scope of instruction, strategic setting, locale, sequence of major events involved in the problem, a general discussion of the considerations pertaining to the commander, and within each staff area that will be developed, future warfare and other designated areas upon which special emphasis is to be placed. The author also develops the instructional methods and techniques to be employed. Here the author is encouraged to exercise initiative and to employ new and improved methods of instruction which are designed to develop decision-making ability on the part of the student.

Upon receipt of the draft Department Directive the Department Director, the author, and selected fully qualified experienced instructors meet in informal review of the directive. This review ensures balanced coverage within the subject and within the departmental block of subjects. Following approval and publication of the Department Directive, an outline plan is formulated by the author and initial coordination is effected, within the department and as appropriate with other departments. A briefing by the author is given to the Department Director to ensure that the planned development of the subject meets the desired objectives and is in line with established guidelines. Upon approval of the outline plan, the actual writing begins. During the writing phases considerable research, study, and detailed coordination are carried out. College policy provides that maximum flexibility will be retained during the preparation of the subject and changes are authorized as new

and better thoughts, new doctrine, and new equipment become available.

After the author completes the writing of his subject, the next phase is the review by the department review board. The board consists of the Department Director, a member of the department Doctrinal Element, and selected experienced instructors. Representatives of AACRI and other College agencies having an interest in the subject area being reviewed are invited. Upon approval by the Department Director, at the department review, the author makes the changes or modifications directed, puts the subject in final form, and dispatches it for printing. New doctrinal concepts approved during the review are submitted through doctrinal channels for inclusion in recommended changes or revisions to current publications.

Liaison

Accomplishment of the department's mission is facilitated by the maintenance of liaison with agencies outside the College. Liaison is maintained with the Armor Section, US CONARC, the U. S. Army Armor School, the US CONARC Board at Fort Knox, and the armored divisions in the field. Effective liaison is assisted and simplified by the fact that responsibility for all armored instruction within the College is vested within one department. Advantage is taken of every opportunity for liaison visits with these agencies and the results have been most rewarding. The availability of senior armored officers attending the Senior Officers' Nuclear Weapons Employment Course at the College has materially contributed toward improvement of the department's course of instruction. A conference with these officers is conducted during their stay and their ideas, experiences, and thoughts are solicited particularly with respect to armor employment on the atomic battlefield of the future.

Emphasis on the Future

Throughout the Department of the Armored Division Course of Study runs an underlying, yet extremely urgent, mission—the requirement of preparing the student for future changes in the nature of armored concepts, doctrine, organization, and equipment. Not only must the student be indoctrinated for rapid, significant, even radical changes of tomorrow, but he must be prepared to acclimate himself rapidly and use the new tools efficiently. The student climaxes his study of armor by considering the developmental items of equipment and new organizational concepts and analyzes and evaluates their impact on the ever-changing battlefield. By projecting himself into the future, the student considers all forms of war, coupled with the varied types of operations, and develops concepts to best utilize armored combat power. Student conclusions and recommendations are carefully considered by the department in the development of future concepts. Research and study are continuous to ensure giving the student the most progressive forward-looking instructional material available. The roles of all arms, including armor, are under constant change toward effecting optimum efficiency; success in battle of future war will be with the commander best prepared to meet it.

Summary

The Department of the Armored Division constantly looks to the future

to provide a stimulating and challenging course of study which prepares the students of the U. S. Army Command and General Staff College to fight on the battlefield of today or tomorrow. The position of armor as a member of the combined-arms team is placed in proper perspective and its capabilities on the atomic age battlefield, including limited war, are emphasized. The student is provided with the armor instruction required to permit him to function effectively in positions appropriate to his grade at the division and higher levels.

In the execution of the department's doctrinal and instructional mission, operational concepts undergo continuous reappraisal to ensure optimum compatibility with the ever-changing future battlefield. As new concepts are developed, reviewed, and approved, they are incorporated into instructional subjects and training literature, thus constituting a continuous cycle. This doctrine is applicable to the employment of the armored division in both atomic and nonatomic war under the varying conditions involved in the wide spectrum of possible operational environments and forms and phases of warfare.

The fulfillment by the Department of the Armored Division of its doctrinal and instructional responsibilities conditions the student to face the future with confidence—confidence in his doctrine, confidence in his matériel, and confidence in his own abilities.

... Armor constitutes a vital combat arm designed for quick decision on the battlefield. With firepower proportionate to the power of its leadership, Armor symbolizes the Army's modern military combination of men and machines designed to prevail on the battlefield.

General Maxwell D. Taylor

MILITARY NOTES

AROUND THE WORLD

UNITED STATES

Atomic Submarine Unit

The nuclear-powered submarines *Nautilus*, *Skate*, and *Seawolf* will join the conventional submarines *Hardhead*, *Bang*, and *Halfbreak* in forming the US Navy's new Atomic Submarine Division 102. When further nuclear-powered submarines are commissioned they will join the division as replacements for the conventional submarines. The fourth United States atomic submarine, the *Skipjack*, is scheduled for launching in mid-1958.—News item.

College Training

The US Army has announced an expanded schooling program under which it will give free four-year college educations, including full regular pay and allowances, to qualified enlisted personnel. The new program will give college training to approximately 300 soldiers and WAC's each year. For each year of free education provided, the student must reenlist for three years. Thus to obtain a bachelor's degree under the plan the student will have to stay in the Army for 12 years. To be eligible to participate in this program applicants must be on active duty, have completed a year of training, possess an aptitude test score of 120 or higher, and be able to finish the full college course before their 35th birthday.—Official release.

Decoy Missiles

The *Bull Goose*, a 31-foot-long fiberglass surface-to-surface missile, is reported to be difficult to detect by radar, its body absorbing rather than reflecting the radar signals. It is powered by a conventional jet engine, weighs two tons, and unofficially is said to attain a speed of Mach 1.3. This missile has been under firing test for several months.

Another developmental rocket, the *Gander*, unlike the *Bull Goose*, is reported to be able to carry a nuclear warhead.

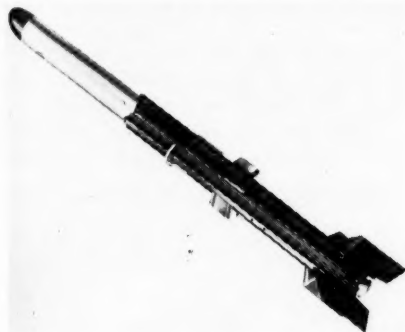
A third missile is the *Green Quail*, an air-launched rocket that is said to perform functions similar to those of the *Bull Goose*.—News item.

Helmet for Tankers

A helmet, specifically designed for the use of tank crewmen, is in production test. Officially designated the Combat Vehicle Crewman's (CVC) Helmet, the new device is constructed of multilayers of laminated nylon fabric and has a built-in communications system. The nylon fabric, similar to that of the Army's armored vest first used in Korea, provides ballistic protection at least equivalent to the standard M-1 steel helmet. Including its built-in communications equipment, the protective helmet weighs about three pounds.—Official release.

Rocket-Assisted Torpedo

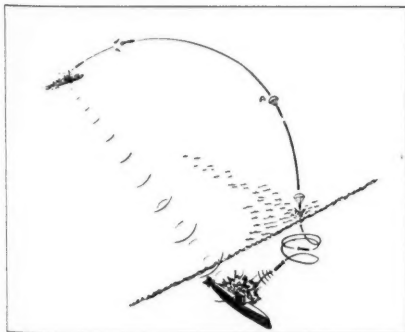
The latest operational antisubmarine weapon of the United States Navy is the rocket-assisted torpedo *RAT*. Propelled



US Navy Photograph

The antisubmarine weapon *RAT*

by a rocket motor, the *RAT* is launched skyward and dropped accurately to the surface at a considerable distance from the launching vessel. Thus it permits the extension of the antisubmarine kill capability of a destroyer far beyond the normal range of a torpedo.



US Navy Photograph

Phases of *RAT* antisubmarine attack

The *RAT* is launched from a modified 5-inch gun mount after being aimed automatically by an electronic computer which

is linked to the sonar submarine detection gear. It is boosted into the air by a solid fuel rocket motor, and after attaining maximum speed the airframe is dropped and an eight-foot-long torpedo is released. As it nears the surface the torpedo is retarded by two parachutes which drop it into the water at a low speed calculated to prevent damage to its delicate guidance mechanism. Once in the water the torpedo's sonic homing system takes over and guides it to the target. The *RAT* system can be installed in the majority of US destroyers by utilizing existing gun mounts. No additional personnel are necessary to operate the system. The weapon is 13½ feet long and weighs 480 pounds.—Official release.

Marine Corps Helicopters

The US Marines will use the *HUS* helicopter for attack operations and the larger *HR2S* to back up the assault troops with heavy equipment. The *HUS*, which carries 10 to 11 combat-equipped marines, also is used by the Army under the designation of *H-34 Choctaw*.

The *HR2S*, a single-rotor helicopter with two 2,100-horsepower engines, can carry up to 36 fully equipped troops and is in use by the Army under the name of *H-37A Mojave*. At the present time the Marine Corps has the ability to airlift more than one reinforced battalion from each of its three divisions. By June 1959 it is expected that they will be able to move one regiment from each division by helicopter.—News item.

Metallic Confetti

Confetti-like aluminum chaff is being used to measure winds in the upper atmosphere. The metallic confetti is carried more than 50 miles into space and released by a six-foot-long *Loki II* rocket. The aluminum chaff is tracked by radar to give an unbroken and accurate map of wind speed and direction.—News item.

Radar Picket Destroyers

Thirty-six *Gearing* class destroyers have been converted to radar picket destroyers and given the designation of *DDR*. The 3,300-ton vessels are armed with six 5-inch guns, and for antiaircraft protection are

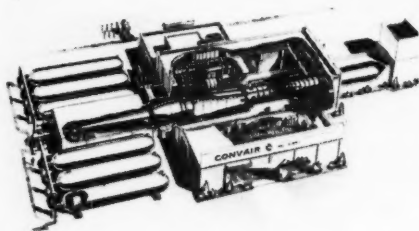


US Navy Photograph
Gearing class *DDR*'s

equipped with either twelve 40-mm or six 3-inch weapons. They have two *Hedgehog* antisubmarine weapons, and are fitted with early warning radar to serve as long-range warning picket ships. The five 21-inch torpedo tubes common to other *Gearing* class destroyers have been removed.—News item.

Test Equipment

An intermittent high-speed wind tunnel now in use on the west coast has a test

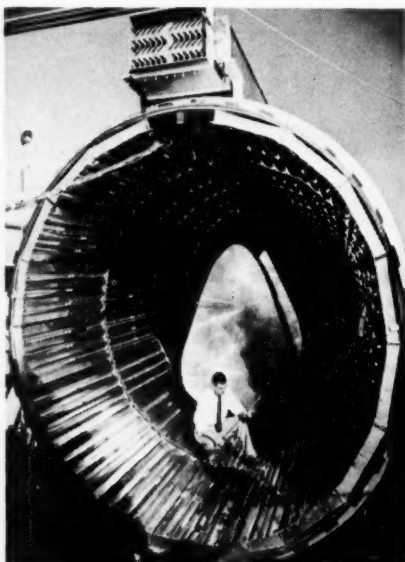


Intermittent high-speed wind tunnel

section four feet square and is designed for operation of wind speeds from Mach

0.5 to Mach 5.0. The basic principle of the intermittent wind tunnel is the use of a comparatively low power system to store energy for discharge in short, intermittent bursts at a much higher energy level. Tests in the new tunnel rarely will exceed two minutes with the average run lasting only 30 seconds. Airflow is controlled by a 24-inch valve which weighs 12 tons.

A vacuum test chamber to check efficiency of air-conditioning and electronics



Aerodynamic heating test chamber

systems of aircraft uses 750 infrared tubular quartz lamps of 2,500 watts each to simulate aerodynamic heating. The chamber can simulate altitudes up to 100,000 feet and heating characteristics of speeds up to Mach 3.—News item.

Giant Transport

Specially designed as a heavy cargo carrier for the Military Air Transport Service, the *C-133A* can be modified for the transportation of more than 200 fully

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equipped troops, or for use as an ambulance. The big turboprop aircraft has a cargo compartment 90 feet long, and 11 feet 10 inches wide. Vehicles up to 12 feet high can be driven through the rear door of the fuselage. The entire cargo area is



US Air Force Photograph

Long-range heavy cargo aircraft C-133A

pressurized and heated. All pressurization and ventilation requirements are provided by a gas-turbine power installation mounted in the left landing gear pod. Compressed air, used in starting the four 6,000-horsepower engines, also is provided by the auxiliary gas-turbine powerplant. The aircraft is equipped with four automatically ejected and inflated liferafts which are stored in the center section of the fuselage, and accessible from emergency exits. A separate liferaft for the crew is stored in the forward fuselage. Production models of the C-133A can carry a 25-ton payload for a range of 4,030 miles, and a 50-ton payload for a distance of 1,300 miles.—News item.

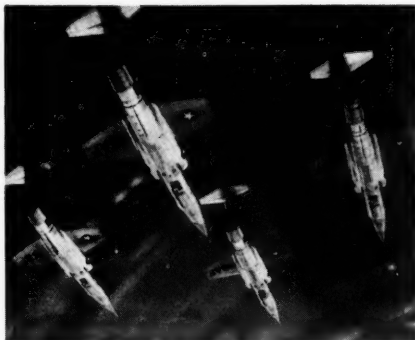
Plastic Shell Case

Several hundred plastic shell cases for the Army's 105-mm howitzer have been ordered for artillery test firing. The plastic case, developed by the Naval Ordnance Laboratory, weighs only two and one-half pounds—less than half the weight of the conventional brass case. In ammunition tests the molded plastic, of which the

cartridge case is composed, will be required to withstand gas pressures of 6,000 to 35,000 pounds per square inch and flame temperature of about 4,000 degrees Fahrenheit at the instant of firing. In addition to the advantage of being lighter in weight, the plastic case can be produced in almost any color, making it possible to use a color scheme for different types of artillery rounds.—Official release.

Speedy 'Starfighter'

The F-104A *Starfighter* interceptor aircraft, now operational with a fighter-interceptor squadron at Hamilton Airbase, California, are reported as being capable of flying at twice the speed of sound. Although no official performance figures have been released, the *Starfighter* has been credited with a maximum speed of about Mach 2.2 to 2.3 in both level and climbing flight. It also has been said to carry more fuel than a World War II P-38 *Lightning* interceptor, and to have a greater range than many much larger fighters in spite of the fact that its airframe weighs only about half as much as other comparable aircraft. The fire control radar of the



Starfighters in operational formation

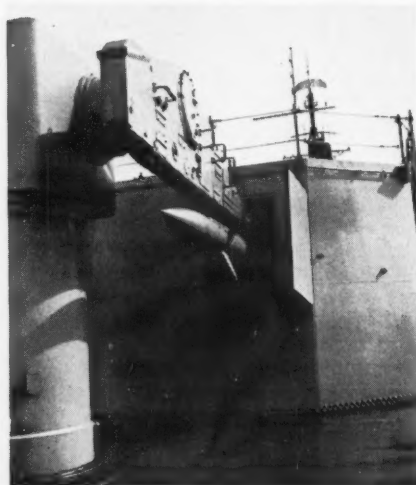
F-104 is contained in the forward two and one-half feet of the conical nose radome of the aircraft. The complete radar system can be removed and replaced by two men in about 10 minutes.—News item.

Radar Power

A method has been found whereby radar signals of up to 21 million watts may be transmitted. The device utilizes a special microwave generator to produce signals considerably more powerful than previously was believed possible. Conventional radar has a power of about four to five million watts.—Official release.

'Terrier' Handling Systems

The converted *Gearing* class destroyer, *Gyatt*, the world's first guided missile destroyer, stores its *Terrier* missiles horizontally to conserve space. Its one twin missile launcher is served by a missile room that also functions as an overhaul

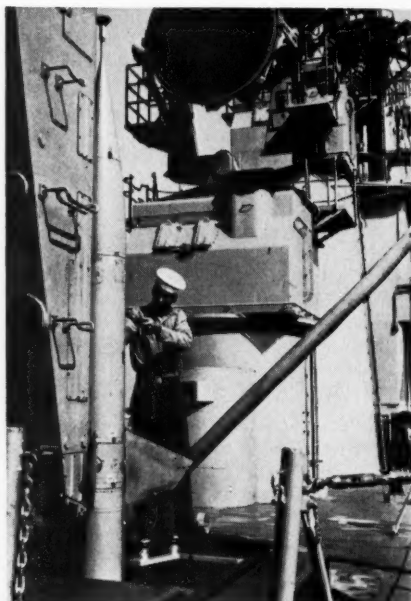


Horizontal loading system of the *Gyatt*

and servicing room. Two drum type revolving rings store the *Terriers* ready for use. Overhead rails remove the missiles from the magazine and transport them horizontally through blast doors onto the launcher.

The two guided missile cruisers, *Boston* and *Canberra*, have a virtually automatic missile-handling system. These vessels

each have two twin launchers, and each launcher is served by its own magazine and missile-handling equipment. *Terriers* and their boosters are stored vertically in a "ready-service ring," one for each arm



Terrier loads vertically on *USS Boston*

of the launcher. By pressing a button, any missile in the ring can be selected and positioned for loading. In the two guided missile cruisers, the *Terriers* move vertically onto the launcher. With this automatic system, the surface-to-air *Terrier* can be loaded and fired at a rapid rate.—News item.

'Skate' Joins Fleet

The United States third nuclear-powered submarine, the *Skate*, has been commissioned and joined the Nation's fleet. The new underseacraft carries a crew of 85, displaces 2,190 tons, and is 267 feet long, about 25 percent smaller

than her predecessors, the *Nautilus* and the *Seawolf*. The *Skate* has established a record on its first shakedown cruise by crossing the Atlantic submerged in eight days and 11 hours. Two more atomic submarines, the *Sargo* and the *Grayback*, are scheduled for commissioning during 1958. Also under construction is the 5,450-ton *Triton*, an atomic-powered picket submarine which will be the first United States submersible to have two atomic reactors.

The Navy's *Skipjack*, the first of six nuclear underseacraft with an *Albacore* hull (MR, Mar 1957, p 66), will utilize foamed plastic instead of pitch and pine as a filler. The polyurethane foam is said to be proof against corrosion, unaffected by salt water, lighter than wood, and will not become waterlogged.

The Navy's atomic submarines designed for the *Polaris* 1,500-mile rockets will be able to fire 16 such missiles from two parallel rows of eight compressed air tubes while submerged. Construction of three of the *Polaris*-armed, 6,000-ton underseacraft is planned to begin in 1958.—News item.

GREAT BRITAIN

Turboprop Development

The *Dart Herald*, a developed version of the earlier *Leonides Herald*, is powered by



Turboprop Dart Herald

two *Dart Mk. 527* turboprop engines which develop 1,910 horsepower each. The *Dart Herald* can carry a maximum payload of over five tons for a range of 700 miles. It can accommodate 43 passengers, and is

said to be designed to operate from unimproved airfields in a variety of climatic conditions.—News item.

Jet and Rocket Plane

The *S-R.53* mixed unit interceptor has both its *Viper* turbojet engine and *Spectre* variable-thrust rocket motor mounted within the fuselage. The jet engine is



S-R.53 with Firestreak missiles

mounted above the rocket motor; the two small air intakes for the *Viper* engine are located to the rear of the cockpit. The *S-R.53*, which is still in the experimental stage, is armed with the *Firestreak* infrared guided air-to-air weapon.—News item.

Rockets for 'P.1B' Interceptor

The *P.1B* supersonic interceptor (MR, Nov 1957, p 70) is to be fitted with a *Double Scorpion* rocket motor for special operations. The rocket motor and its high test peroxide oxidant tank are fitted into a pack which can be attached to the underside of the *P.1B* fuselage. The rocket will enable the *P.1B* to operate either as a mixed powerplant or as a pure jet fighter and will use fuel drawn from the aircraft's tanks. The interceptor's two *Avon* turbojet engines provide a total of 25,500 pounds of thrust and give an unofficially reported top speed of Mach 1.4. The *Double Scorpion* engine is 34 inches long and 23 inches wide. It has twin barrels which can be fired together or separately, and can be stopped and started at any altitude repeatedly.—News item.

AUSTRALIA

Naval School Moved

The Australian Naval College has been moved from its old location at Crib Point, Victoria, to Jervis Bay, 100 miles south of Sydney. The college has been given the official name of H.M.A.S. Creswell.—News item.

New Rifles Ready

The Australian-made production models of the Belgian .300 FN semiautomatic rifle, which will replace the .303 Lee-Enfield rifle currently in use by the Australian armed forces, will be available for issue by the end of this year. The rifles will be in the hands of the troops by June 1959.—News item.

Mixed Power Drone

A mixed powerplant version of the *Jindivik* target drone is under consideration. The use of an external rocket engine is expected to permit the operation of the aircraft to altitudes of 70,000 feet. The current model of the *Jindivik* utilizes a *Viper* turbojet engine and operates to a ceiling of 50,000 feet. The 2,800-pound remote controlled aircraft is capable of a speed in excess of 575 miles an hour.—News item.

JAPAN

Earthquake-Proof Reactor

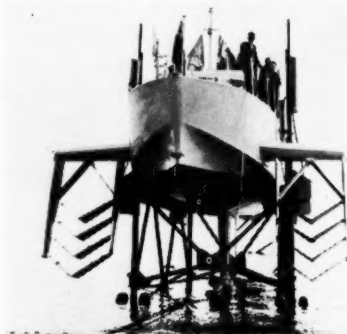
Three British engineering groups are competing in the design of an earthquake-proof atomic reactor for Japan. The natural uranium for the reactor is to be supplied from British sources, and the installation is expected to be located at the Tokai nuclear research establishment, 70 miles northeast of Tokyo.

The Japanese Atomic Energy Institute has purchased seismometers and other United States equipment for use in protecting its reactors from earthquake shock. Facilities to house Japan's second United States-provided reactor are under construction.—News item.

CANADA

International Hydrofoil

The *Bras d'Or*, a 17½-ton hydrofoil craft built in England, is in use in Canada for research purposes. Powered by two *Griffon* marine engines, the vessel may be



Bras d'Or has V-shape hydrofoils

employed as a high-speed air-sea rescue craft or as a replacement for small naval vessels. It is said to be able to travel at high speed in rough water since the three hydrofoils lift the hull completely above water surface at speeds of 20 knots or more.—News item.

Frigates Modernized

With the reconstruction of the *River* class frigate escort *New Waterford*, the modernization of 21 Canadian Navy frigates has been completed. In the modernization of the vessels, the bridge structure was removed and rebuilt in aluminum. Principal armament of the reconditioned warships are two triple-barrel antishubmarine mortars with twin four-inch guns mounted forward and six 40-mm antiaircraft weapons. Three *River* class vessels are employed as weather ships and another, the *Buckingham*, has been equipped with a helicopter platform for antishubmarine reconnaissance and to test the feasibility of operating helicopters from antishubmarine frigate escorts.—News item.

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Fire-Fighting Plane

A fire-fighting device has been developed for use by the *C.3 Otter* aircraft, a utility plane used by both Commonwealth and United States Armed Forces. The equipment, which consists of a 90-gallon tank and a refilling device, permits the delivery of 1,800 gallons per hour on a fire up to



Otter with fire-fighting equipment

two miles away. The filling of the tank takes only 18 seconds, and occurs automatically as the aircraft taxis across the surface of a lake.—News item.

FRANCE

Long-Range Missiles

In a move to broaden France's extensive guided missile program (MR, Dec 1957, p 70) six of the nation's leading aircraft manufacturers and four other industrial groups have joined in an association to develop and manufacture long-range missiles.—News item.

Versatile Aircraft

The *SO 4050 Vautour* is a swept-wing, twin-jet aircraft that is in production in three different models—a single-seat ground support fighter, a two-seat bomber, and as a two-seat, all-weather fighter. With normal load the *Vautour* can operate from runways measuring less than one-half mile in length, and a ribbon type parachute may be used to shorten the landing distance still farther. The aircraft features a tandem type landing gear, and is powered by two *Atar 101E-3* axial flow



Bomber version of the *Vautour*

turbojet engines of 7,700 pounds thrust each. It is capable of a maximum speed of about 680 miles an hour. The *Vautour's* armament consists of four 30-mm guns mounted in the fuselage nose, rockets or bombs in the bomb bay, and underwing mounting for air-to-air missiles. It is the first French plane to accomplish refueling in flight successfully.—News item.

YUGOSLAVIA

US Arms Aid Ends

The United States Military Aid Program to Yugoslavia, which started in 1951, has been terminated at the request of Yugoslavian authorities. In six and one-half years the United States has provided Yugoslavia with more than 750 million dollars worth of arms for the program. Of the 28 army divisions eight are equipped with US weapons, and the air force is outfitted completely with US jets.—News item.

USSR

Heaviest Helicopter

The *Mi-6*, which has been described as the world's heaviest helicopter, has an estimated gross weight of 66,000 pounds and can carry a maximum of 28,500 pounds or 80 passengers with baggage. The 115-foot-diameter main rotor of the big VTOL craft has five blades, and is driven by two *Soloviev* turbine engines of 4,000 horsepower each. It has a top speed of approximately 140 miles an hour.—News item.

Research Plans

The Soviet Union has announced plans to launch approximately 125 rockets into outer space during 1958 as participation in the International Geophysical Year program.—News item.

Light Jet

The *MiG-105* is a lightweight two-seat jet designed for popular flying. The aircraft appears to be a scaled-down fighter with a small engine of 1,100 pounds thrust. It will be in flight test later this year, and is scheduled for production in 1959.—News item.

Force Cuts

The Soviet Union has announced that military units totaling more than 41,000 men have been removed from East Germany to Soviet territory and disbanded. Units scheduled to be included in this project were two mechanized divisions, one anti-air raid division, three independent artillery brigades, and five independent anti-aircraft units. It also was claimed that 17,000 troops were to be withdrawn from Hungary as part of the Soviet Union's announced plan to slash her armed forces by 300,000 this year (MR, Mar 1958, p 72). It has been estimated that the Soviet Army had 400,000 men, plus a tactical air force, in East Germany before the withdrawals began. An estimated 60,000 to 80,000 Soviet troops remain in Hungary.—News item.

Heavy Rocket

A single-stage rocket weighing two and one-half tons is reported to have been fired to an altitude of 294 miles. The rocket is said to have been equipped specially with stabilizers which prevented it from spinning on its axis.—News item.

EAST GERMANY

Jet Transport Developed

It has been reported that construction of the first East German-designed jet transport, the four-jet *BB-152*, is nearing completion and is scheduled for early flight testing.—News item.

Seaport Expands

The main East German seaport of Rostock is being expanded to increase its cargo-handling capacity from one million to seven million tons. The project, which will take 10 years to complete, includes the deepening of the Warnow River to accommodate vessels of 10,000 tons, and the improvement of an entrance canal which will lead from the river to two harbor basins, each 600 by 3,520 feet.—News item.

THE NETHERLANDS

Big Liners Planned

It has been reported that four passenger liners of about 120,000 tons each are to be built in the Netherlands for American ship operators. The first such vessel is to be named the *New Yorker*. The largest passenger vessels now in use are the British *Queen Mary* (81,237 tons) and the *Queen Elizabeth* (83,673 tons).—News item.

POLAND

'Bumblebee' Helicopter

A pulse-jet single-seat helicopter, called the *Trzmeil* (*Bumblebee*), is being tested. The 23-foot-diameter rotor of the helicopter is powered by two 48.4-pound thrust pulse-jet engines mounted on the rotor tips. The *Bumblebee* weighs 660 pounds empty.—News item.

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ITALY

Cold Jet Helicopter

The *Fiat 7002* is a medium capacity, dual-control helicopter for passenger and general cargo transportation. The main rotor of the 7002 is driven by jets of compressed air from the rotor tips. Such a configuration is called "cold jet" since no fuel is burned in the rotor tip jets. The



Fiat 7002 cold jet helicopter

compressed air is provided by a turbine air compressor which is powered by the exhaust of a vertically mounted turbojet engine. The helicopter weighs 1,320 pounds empty and has a payload of 1,760 pounds that it can carry at a speed of 100 miles an hour for an operating range of 180 miles. An unusual feature of the 7002 is the ducted tail rotor. The lack of reaction torque would permit elimination of the tail rotor, but it is retained to assure directional control at low forward speeds and during vertical autorotation. The aircraft can carry six passengers in addition to the pilot.—News item.

WEST GERMANY

Patrol Changes Hands

The Rhine River Patrol, which has been operated by the United States Navy since 1949, is planned for early return to the control of the Army. The primary mission of the patrol is the support of the US Seventh Army. It also controls barge traffic, operates landing craft which are capable of transporting the *Honest John* rocket and the 280-mm artillery weapon, and protects the bridges on the Rhine.—News item.

US Forces Regroup

The United States Army in West Germany is reconstituting the 24th Infantry Division. The 11th Airborne Division is to be placed on the inactive list to make room for the new organization. The composite 24th Division will consist of three infantry and two airborne groups including the 1st Airborne Battle Group, 187th Infantry; 1st Airborne Battle Group, 503d Infantry; and the 1st Battle Groups of the 19th, 21st, and 34th Infantry.—News item.

COMMUNIST CHINA

Army Allowances Reduced

Soldiers of the Chinese Red Army have been given a reduced allowance of food, clothing, and fuel in a move that is expected to save about 14 million dollars per year for the Chinese People's Republic. The grain ration has been cut by one ounce and the coal allowance reduced by seven ounces per day for each serviceman. All service personnel are to receive only one uniform per year, instead of the two uniforms previously furnished.—News item.

NATO

Arms Development Union

Italy has agreed to join West Germany and France in the development and production of weapons for the NATO defense system. Although details of the combined effort have not been announced, it is reported that early emphasis will be given to the standardization of short-range missiles and vehicles for ground forces. The program also will include a project to develop a light tank especially adapted to western European terrain.

Great Britain and West Germany have agreed on the broadening of efforts to achieve a standardization of weapons. Research and development projects aimed at creating a standard arsenal of weapons will be pursued through the seven-nation Western European Union.—News item.

FOREIGN MILITARY DIGESTS

Soviet Seapower The Russian Submarines 1857-1957

Digested by the MILITARY REVIEW from a copyrighted article by
J. Meister in "The Navy" (Great Britain) July 1957.

THE Soviets claim that the Russians invented—in addition to many other things—the submarine. Although this is not true, it must be admitted that they were among the first nations to be interested in this weapon.

As early as the Crimean War the Russians acquired a submarine constructed by a German, Wilhelm Bauer. In June 1854 this boat underwent successful eight-hour trials off Kronstadt with 11 men aboard; but the vessel came too late to change the course of the war.

At the same time the Russian, Spiridov, projected a small submarine for the defense of Sevastopol, but nothing materialized before the fortress fell. In 1866 Alexandrovsky built a 300-ton submarine which apparently did not prove a success. Drzewiecki followed in 1877 with a small, one-man submarine which must have given more satisfaction, because in 1879 the Russians did not hesitate to build 52 submarines of an improved four-man type. How-

ever, these ugly-looking craft did not fulfill the high expectations placed on them, and they ended their careers ingloriously as buoys.

In 1881 Alexandrovsky turned up with another project for a 460-ton boat but it is doubtful whether she was ever commissioned. Again, in 1886, Drzewiecki, who believed in small submarines, constructed a two-man submersible which seemed to give better performance.

The first reliable submarine was to be the 250-ton Swedish *Nordenfeldt "III,"* built in 1887 in England and purchased later by Russia; but she stranded in Denmark while en route to the Baltic and became a total loss.

In 1888 and 1896 the untiring Drzewiecki produced two more designs of semi-submarines of 150 and 190 tons, called *aquablindes*, but they were failures too. Poukalov's steel-hull, electrically driven submarine, built between 1896 and 1901, was the first modern Russian submarine.

In 1901 a one-man boat designed by Boikin also was tried out successfully on the Neva River.

The 20-ton submarine, *Pjotr Kochka*, constructed in 1902 by Kolbasijev and Kouteinikov, was the first Russian submarine to become involved in war operations. She was shipped to Port Arthur, but proved unable to attack the Japanese ships off the beleaguered naval base and had to be scuttled when the fortress capitulated.

The 1904-05 war forced the Russians to notable efforts in the field of submarine construction. They built a suicide submarine with a three-man crew which failed to find any suitable target: they shipped the *Keta*, built in 1905 by Janovitchi, from Europe to the Amur River; and they purchased American and German-built submarines which, toward the end of the war, operated off Vladivostok. Their activity, however, was more dangerous to themselves than to the Japanese.

Although Boubnov-Beklemishev, Drzewiecki, and Shurajev built or projected three more prototypes—including one submersible cruiser of 4,500 tons in 1910—Russian construction now concentrated on submarines of Krupp, Lake, and Holland types, and between 1904 and 1907 sixteen such craft were commissioned. During the same period only eight vessels were built to the plans of Russian designers.

World War I

The boats launched so far were all of a small type, but in 1908 the Russians started to build five medium types of about 400 tons and ordered one new boat from Fiat-Ansaldo. In 1913 they launched the mine-laying submarine *Krab* in the Black Sea, and commissioned the first large submarines of over 600 tons just before World War I. In 1914 the Czarist navy had 12 submarines in the Baltic, five others were shipped in from the Pacific, and 23 more were built during the war.

There were four submarines in the

Black Sea, two more arrived by rail from the Pacific, and 19 others were built during the war. Only five submarines remained in the Pacific; the Italian-built *Sviatoi Georgj* went to the Arctic. The Russians also had three army-built pocket submarines for the defense of Kronstadt; two of them were sent to the Arctic and the third to the Danube.

As only 43 of these World War I submarines were modern and most of them were not available before 1916, the results were rather meager, especially when compared to the harvest which 10 British submarines gathered in the Baltic.

Three steamers were captured and seven sunk by submarines of the Baltic Fleet. In the Black Sea some Turkish steamers and coastal craft were destroyed or captured, and the *Krab* laid mines off the Bosphorus. On the whole, the results were better than in the Baltic. There were no sinkings in the Arctic. The three pocket submarines and four old and five modern submarines were lost up to the outbreak of the Bolshevik Revolution in November 1917.

The revolution and the civil war almost destroyed the Russian Navy, including its submarine branch. The only success the Soviets claimed was the sinking of the British destroyer *Vittoria* off Seskaer in the Baltic on 31 August 1919. But the British scuttled 13 Russian submarines at Sevastopol prior to its evacuation in March 1919, four others were scuttled in the Baltic, and others were never commissioned. One submarine fell into Finnish hands, and in 1920 four were interned with the rest of the White army and navy in Bizerte.

About 60 submarines under construction, including boats of 950 to 1,800 tons and a few submersible cruisers of 2,000 to 3,000 tons, were never completed. During the operations on the Volga and in the Caspian Sea against the "Whites" and British-armed vessels, the Soviets

formed a flotilla of five old submarines transferred from the Baltic which, lacking trained crews, they used as surface patrol craft.

When all was over, the Soviets scrapped 22 older submarines. In 1923 they possessed only 10 boats in the Baltic Sea and five in the Black Sea. They later added the refloated British *L55* which had been mined in 1919 off Kronstadt.

The Buildup

With the first five-year plan the building of a new submarine fleet started, and in 1930 the first boats of the *Dekabrist* class were commissioned in the Baltic and Black Seas, to be followed in 1933 and 1935 by vessels of the *Leninetz* class. Soon afterward the first submarines of these classes appeared in the Far East and in the Arctic.

With the second five-year plan Soviet submarines came into service in ever-increasing numbers. The first type to be produced in large numbers was the 200-ton *M* class which also could be shipped by rail from one theater to another. The *Shja* class displaced 600 tons and were constructed in large quantities. Shortly before the war the Russians commissioned the first units of *S* and *K* classes of 780 and 1,390 tons respectively, while three submarines of the *P* class of 1,200 tons were complete failures.

In 1939 there were approximately 72 submarines in service in the Baltic and 22 others under construction; seven in the Arctic and three building; and perhaps as many as 42 ready in the Black Sea and 13 being built. The figures for the Pacific showed 74 submarines commissioned and 12 not yet completed. While one submarine was sunk during the winter war between Finland and Russia, and some others were lost through accidents, the strength of the Soviet submarine fleet continued to increase up to the outbreak of the German-Russian war in 1941.

On 22 June 1941 there were 94 subma-

rines in the Baltic and 34 others due for commission. Shortly afterward 19 submarines were sent via the Stalin Canal to the Arctic; and as 16 others were not ready for service and 13 more were used for training, only 46 actually could be made available. In the Arctic there were perhaps 20 boats, and in the Black Sea almost 50, while the Pacific Fleet had reached over 80. Altogether the Russians had between 250 and 260 submarines, of which only 15 were of old construction built under the Czarist navy.

Compared to these figures the German submarine fleet, with its 57 boats when war broke out, did not look so formidable, therefore, much was to be expected from the Soviet submarines.

The Finnish-Russian War already had produced very poor results. Only four merchant ships and one armed Finnish yacht were sunk. Therefore, it was hardly surprising that, during the five months of submarine warfare in the Baltic in 1941, the Soviets lost 27 submarines for one German steamer sunk by torpedoes and two naval auxiliaries sunk by mines.

In the Black Sea and Arctic, results were almost as poor although in the Black Sea the Axis convoys were escorted only by the few ill-trained Romanian warships at that time.

World War II

The Russians, however, had learned something and prepared for the campaign of 1942 thoroughly. Boats were degaussed, thickly covered with paint, and the fuel tanks enlarged. To reach the open Baltic, the submarines had to break through a very dense German-Finnish minefield patrolled by submarine chasers and aircraft. Nevertheless, between June and December 1942 about 25 submarines tried the dangerous trip, and many succeeded, some even two or three times. Altogether 23 German, Finnish, and neutral merchant ships were sunk by torpedo and gunfire, and four

more small ships may have been lost through Russian-laid mines.

However, 10 submarines were destroyed mostly by mines and three by Finnish submarines. In the Baltic the Soviets had obtained some small success, but in the Arctic and in the Black Sea they continued to achieve very unsatisfactory results.

To prevent submarines in the Gulf of Finland from reaching the open Baltic the Germans again installed an antisubmarine net. This stopped any breakout in 1943 and cost the Russians two more submarines. In the autumn of 1944 after the Finnish armistice and the German retreat from Estonia, the Soviet submarines again operated in the Baltic. They sank about 25 ships among the ill-protected German transports, and lost at least one submarine. Among the ships sunk were three carrying refugees and wounded causing the loss of over 15,000 lives.

The submarine war in the Arctic cost the Germans about 30 cargo ships and some armed trawlers. These submarine chasers, often armed only with depth charges and 20-mm guns, were sometimes outgunned by the faster and heavily armed large Soviet submarines. Most of the sinkings off northern Norway were, however, the work of British and Allied submarines. In the Black Sea submarine warfare accounted for about the same amount of shipping and some auxiliaries and landing craft.

Altogether about 100 cargo ships and 30 small craft totaling less than 300,000 tons were sunk during the war—or not even 10 percent of what the Russians claimed. No major German warship—battleship, cruiser, destroyer, or submarine—was damaged or sunk by Soviet submarines. The Soviets lost at least 40 submersibles in the Baltic, 20 others in the Black Sea, and another 20 in the Arctic—or almost one for every cargo vessel sunk.

Except for some submarines built during the war in the Far East and four

received from the Royal Navy, Soviet submarine building had almost stopped. Only nine of the 34 on the stocks at Leningrad at the outbreak of the war were completed by 1945.

Taking into account all the old boats to be scrapped, the Russians came out of the war with about 150 operational submarines, of which as many as 90 might have been in the Far East, 25 in the Baltic, perhaps 20 in the Arctic, and another 15 or 20 in the Black Sea. They received 10 surrendered German submarines, and they captured a few, half-scuttled in East German ports and many more which still were under construction. They also received two former Italian submarines, and completed some of the unfinished German vessels.

Post-World War II

At least 220 submarines were available when the Soviets started building up a new postwar submarine fleet in 1949-50. Soon they were able to produce as many as 60 units a year and today the figure may be around 80. Besides the improved, small *M* type they concentrated mainly on the *W* design, of which as many as 230 were said to be in service last year.

Among other types of submarines built since 1950 are large and fast minelayers and improved coastal types, possibly also a few special polar and transport submarines. According to unconfirmed reports, the Soviets are building an atomic-powered submarine. At least 350 new submarines have been built since 1949-50. Over 500 actually are under the Soviet flag, while another 70 older boats have been discarded or sold to satellite powers. The satellite powers are estimated to have about 50 underwatercraft.

These 550 Communist submarines, almost 10 times more than the Germans boasted in 1939 and more than they ever had in service during World War II, doubtless present a certain menace. Nevertheless, it must not be overlooked that about 150 are older boats, useful only for

coastal defense and training, and another 50 modern small submarines cannot operate very far from the Russian shores. The remaining 350 form the bulk of Soviet seapower.

The distribution of Soviet submarines may be as follows:

| | Baltic | Arctic | Black Sea | Pacific |
|---------------|--------|--------|-----------|---------|
| Soviet Russia | 150 | 100 | 100 | 150 |
| Poland | 10 | --- | --- | --- |
| Romania- | | | | |
| Bulgaria | --- | --- | 10 | --- |
| China | --- | --- | --- | 30 |

According to persistent rumors, a few submarines now may be in the Mediterranean, based at Albanian ports, and hoping later to use Egyptian, Syrian, and Yugoslavian harbors.

Although submarines can, during six months of the year, pass through the canal systems between the Baltic and Arctic and into the Black Sea, the bulk of the submarine fleet—270 boats—is locked up in the Baltic and Black Seas. Only those in the Arctic and the Pacific would operate immediately against the vital allied lifelines in the Atlantic and Pacific.

Of over 150 oceangoing submarines based at Polar and Far Eastern ports, not more than 50 can be operating at any given time against shipping, because at least one-third is always refitting, and probably more than one-third is on passage to and from the operational theater. This reduces the figure to about 20 submarines at a time in the Atlantic, and 30 in the Pacific.

Strategy

But if the Soviet Army could take and keep open the Danish and Turkish controlled straits leading into the North Sea and the Mediterranean, the picture might change radically. The many submarines bottled up in these landlocked seas then could be thrown into the battle for seaborne trade.

However, merchant ships probably do not form the main target for the Soviet submarines. From German experience in two World Wars, and from the results obtained by their own submarines, the Russians have concluded that even 500 submarines cannot sink sufficient merchant ships fast enough to secure a decisive success within a few months. While the merchant shipbuilding capacity of the Western Hemisphere can increase, Russian ability to build submarines could not. Today, they are building submarines as fast as they can, placing orders for merchant ships mostly abroad. In wartime, Soviet shipbuilding capacity (about one million tons per year of which more than half is inland shipping only) would prove quite insufficient to replace losses of surface warships, submarines, and merchant ships. During the last war the Germans were able, at best, to produce about 20 submarines per month, but it took 60 percent of Germany's and occupied Europe's output capacity for electrical gear to build these submarines. And yet Germany lost the submarine war.

The Russians are, therefore, concentrating their effort upon a short submarine campaign, possibly sending all available submarines to sea simultaneously to attack allied warships and troop transports. Huge packs may try to prevent enemy task forces, including the dreaded aircraft carriers, from penetrating Russian-controlled waters, or from approaching the Russian coast to devastate Soviet shipping and industrial targets. The many long-range submarines may even set traps for allied naval forces near NATO naval bases, create diversions at almost every point of the globe, and launch a few guided missiles against the many coastal towns which are still out of range of the Soviet Army and Air Force.

Handicaps

Besides the relatively low efficiency of their submarines, three handicaps have

so far clouded Russian prospects. Their jumping-off bases are a very long way from the main NATO bases and from important ports and shipping lanes. Much time might be lost in passage to and from the operational zones. The Soviet Army, however, may conquer better placed ports, as did the Germans in 1940, when their submarines could use the Norwegian and French bases. Since the Soviets suddenly seem to be building modern supply and depot ships, the mobility of the Soviet submarine fleet may increase considerably in the near future. Flotillas can be operated from hidden anchorages which first have to be found and destroyed by allied forces, and in the meantime—the notorious “broken back” period—the war might be lost elsewhere.

The second weakness lies in the equally remote bases of the naval air force. The modern submarine, traveling mostly underwater, has much difficulty in finding her small targets in the vast oceans. The submarines need, therefore, to be guided by competent aerial reconnaissance; and, with stiff opposition to face from allied shipborne fighters, Soviet long-range aircraft may not be able to obtain the expected results. However, the Russians are working hard to improve the naval air force, both technically and numerically, and these aircraft too could use better situated bases secured by the Soviet Army.

The third handicap and main difficulty, which probably cannot be overcome, lies in the complete lack of experience of oceanic submarine warfare and in the Slav character. The few former German submarine officers working with the Soviet Navy cannot change such imponderables.

The USSR and NATO

The real danger lies, therefore, in Russia's ability to keep the allied fleets so busy defending themselves against Soviet submarines that, during the first few weeks or months of an eventual war, the NATO armies might not receive all the supply and seaborne support they need to stop the vastly superior Soviet Army.

Tactical atomic weapons are double edged and so are nuclear weapons. Even if all Russian home bases were destroyed, the Soviet Army, Navy, and Air Force, depending on hidden supply depots and operating from still unknown bases, may, for a few weeks, keep their numerical superiority—just long enough to overrun Europe and secure west European industrial centers which might not be atom-bombed at once.

The best means of thwarting such Soviet plans consist not only in guided missiles but also in stronger, immediately available land forces in Europe, and in stronger, fully commissioned naval forces. Both the United States and Britain have the warships, but too many are in reserve. It would be of no use to Europe for a third world war to be won by the United States after a devastating atomic attack.

The war must be either avoided by our strength or at least won before the Rhine is crossed. The Russians cannot win a world war, but the difficulty lies in persuading them of this.

The more warships the NATO powers have ready, the longer it will take and the more difficult it will be for the Soviet submarines to obtain appreciable results. In the meantime, their chances of winning a “quick” war elsewhere will become slimmer.

War Against Partisans

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PARTISAN war developed, expanded, and was intensified in the course of World War II and continued after the war in other continents. It no longer resembles its close relative and predecessor, "guerrilla war," although there are some common basic characteristics.

The latter was led by small groups of irregulars and gangs against the flank and rear of an invading enemy in a country suitable for a dispersed war. In some cases (Napoleon's war in 1808 in Spain, the occupation campaign of Austria-Hungary in Bosnia, and Herzegovina, 1878-79), guerrilla war developed into considerable dimensions and could boast some successes over the enemy forces. The civil war in Spain in the 1930's, however, demonstrated some of the characteristics of the coming Communist partisan wars.

In World War II partisan wars were born in the Russian and Yugoslavian theaters under common leadership and with constantly increasing forces. After the experiences of 1941-45 these wars cannot be labeled as small or guerrilla wars, and this term will be even less applicable in future wars. We will have to expect an advanced and intensified partisan warfare wherever circumstances and time factors are favorable.

The Romanian Ministry of Armed Forces includes an independent Department for Partisan Units. It is only natural and probable to expect similar departments in all other satellites of the Soviet Union, since the armed forces are guided directly by Moscow.

Only states conforming to the ideology of communism will be interested in the peacetime preparation for partisan warfare. They are prepared to start a partisan war not only in their own country, if neces-

sary, but also very possibly in other countries. This may happen in Communist-led countries that are completely or partly occupied by the USSR as well as in non-Communist countries with a well-organized strong Communist Party.

Those who will have to fight a war against these partisans are at a certain disadvantage, for a partisan always has an advantage over a soldier of the regular army. Partisan war is nothing but primitive infantry duty. The modern soldier dislikes it and its many-sided training, but training for combat against partisans must be given to the soldier who is someday going to fight against partisans.

Combat against partisans will be successful only if aggressively led toward the goal of a complete halting of partisan activities. To annihilate partisans entirely probably will be impossible, particularly in countries where the population sympathizes with the partisans. In order to achieve complete success against the partisans one has to try, wherever possible, to eliminate the reasons and causes for their existence.

World War II

Only after the outbreak of war between Germany and Russia in World War II did partisan war begin to work effectively. Although the use of partisans had been planned by the Russians, even they did not seem to expect much of them in the first general disorder of the war.

The Germans, however, made grave mistakes in their administration of occupied territories. This created a favorable basis for the development of a partisan war behind the German front. Later, the Russians made considerable use of it.

Yugoslavia was defeated in 1941. Here,

a central committee of the illegal Communist Party of Yugoslavia (under the command of today's Marshal Tito) took skillful leadership in the partisan rebellion and made use of the existing moment of weakness of the country. The defeated Royal Army surrendered to the Germans in April 1941. Because of the impending war with Russia the Germans left few occupation troops in Yugoslavia and Croatia.

Secret preparations were made in this same month (April 1941) by the central committee for a rebellious move of the Communist Party, and partisan warfare had begun. As soon as the war between Germany and Russia broke out (22 June 1941) the partisans engaged simultaneously at several places in small actions. From then on the number of partisans grew steadily and they always managed to maintain the initiative in their activities.

The higher military staff of partisans, emerging from the central committee, had succeeded by the summer of 1941 in uniting about 80,000 Communist fighters and sympathizers under the Red banner in Yugoslavian territory. It still took over half a year for the rebellion to become dangerous. Up to 1942 the partisans were dispersed over the wide Yugoslavian area and had to engage their activities without mutual support until coordination was achieved.

The Future

Modern partisan war, born in World War II, also had affected some colonies outside Europe. In order to gain independence, some colonial people adopted this type warfare as a basic principle. These rebellions received help from outside sources. It had been well-understood that a partisan war that received strength and support from a foreign country and that could, therefore, last very long was an excellent instrument in the hands of those who wanted to fight the modern and organized armies of the ruling powers suc-

cessfully. It could cripple the dominant powers and be the cause of constant unrest of the country.

The partisan war of irregulars is very often cruel and inhuman. It does not acknowledge any international agreement, but must be considered since there always will be someone under present conditions who will make use of it. Every government, therefore, that might come into contact with partisan warfare must provide a force that is well-prepared to meet the partisans on their own ground. The "modern partisan war" that came into existence in World War II as a war of arbitrary action will be made more effective in the future through considerable preparations (that is, premilitary training of youth and assistance of older men beyond draft age, as well as the employment of women who often serve fanatically).

Accordingly, countermeasures that were devised as improvisations during World War II have to be prepared more thoroughly. Partisan war will be adapted in every aspect to the conditions of the country. The main characteristics however are as follows:

Normal partisan war.—Occurs behind the battlefield of the enemy while the regular army is still fighting on its own territory.

Total partisan war.—After the regular forces are defeated or expelled from their own country, total partisan warfare breaks out with a rebellion of irregular troops. Partisans continue to fight their own war against an enemy who occupies their entire country.

Colonial partisan warfare.—Led by rebellious Nationalist or Communist forces trying to free their country from the colonial power.

Normal partisan war is a very special case. In World War II it was fought mostly in Russia against the Germans. Countermeasures were improvised and perfected in the later years of the war. They

consisted of so-called "safety divisions" at the main logistical keypoints and reorganized combat units for offensive combat against partisans.

As a basis for a discussion of total partisan war, we have the experiences of the war from 1941 to 1945 in the territories of the then "independent state of Croatia" and the rest of Yugoslavia.

Partisan Tactics

The ideology of world communism is the same everywhere and it is the main source of strength for every real partisan. It compels him to be active in politics in peacetime and to fight daringly and stubbornly in time of war. His way of fighting is close to the basic infantry methods of surprise attacks at night and use of ambush. In open areas the partisan fights in small and widely dispersed units.

The aim of the partisan is to destroy the enemy. His everyday normal tactic, however, is to avoid any open fight with the enemy except when the latter is definitely weaker. The partisans try to keep their forces combat ready up to the very end of the war. In critical situations, however, they will employ strong counterattacks, if necessary, in order to make escape possible for a majority of their number.

Partisan war is characterized by a combination of cruelty against the enemy, and of reckless harshness and harsh discipline toward fellow partisans. The partisan destroys in reckless fury everything that might be of use or sacred to the enemy. The population is treated very friendly at first, especially by the leaders of the partisans who desire the aid and assistance of the people. Their propaganda machinery works night and day toward this goal and often is successful with a primitive or unenlightened population. Should the population show a declining or even unfriendly attitude, however, the partisan will attempt to terrorize the population in order to neutralize it.

Origin of Partisan Units

In especially suitable localities a planned development of cells from Party members is organized. These cells, together with other Communists and their sympathizers, constitute more and more "partisan detachments" in designated areas but without permanent residence. By this time partisans are engaging in combat activities by attacking smaller groups of the enemy, transports, and other objects. This also provides them with additional weapons.

The developing partisan detachment is seldom militarily organized. After reaching a strength of several hundred members, it is ready to turn over its best combat elements to the supreme military staff. These elements, sometimes already organized into platoons and companies of small strength, are then organized into military units.

For this development, however, it is necessary that larger areas be controlled by the partisans. The enemy must be driven out of these areas by combat activities of already strong partisan detachments. These areas are called "liberated" or "free territories." There also are "no man's land" areas where no occupation troops have been stationed by the enemy.

The desired, but seldom obtained, strength of a Yugoslavian partisan detachment was 1,000 men. The detachment usually remained in its area as a territorial combat group, releasing a number of men occasionally to the higher command. Sometimes they even continued their activities in areas occupied by the German troops.

The supreme staff, meanwhile, organized mobile combat troops and employed them successively for certain operations such as the liberation of new areas, the occupation of free territories, and the conquest of cities. From the very beginning of its organization of mobile forces, the military command of the partisans forced new men

into the service at every opportunity. This was accomplished by drafting local Communist members or sympathizers or by stern methods of terror against non-Communists. These men then served in the newly organized mobile formations.

The basic unit of the mobile forces was the brigade. A brigade was composed of four, or occasionally five, battalions of 200 men each. The battalions had two, three, or four very weak companies placed under the direct command of the brigade. Companies were specially trained in either mine or grenade launching, in communications or reconnaissance, or with light mountain artillery. All of them were armed with small arms and submachineguns. There were few vehicles (used only for transport of ammunition and heavier weapons).

At first, such brigades were about 800 to over 1,000 men strong, very mobile, and trained for long marches. Movements usually were executed at night. In this regard the marching units without doubt were superior to the regular troops. Later on, the great number of mobilized brigades caused a concentration of most of them into divisions. The division unit, however, always remained in a very loose order and existed mostly in the form of a small division staff. The elite brigades were called "proletarian brigades."

Methods of Combat

In the beginning, continuous small activities occurred in different places all over the rebellious area. Later on, great missions were directed against isolated points of support and small garrisons, followed by successive conquests of certain zones with the objective of occupying and controlling these zones for a longer—if not indefinite—time (liberated or free territories).

A surprising speed of movement was achieved by even larger units—usually during the night. Decisive battles were avoided. They did not want to wear out

their own forces but wanted to maintain their proper strength. They fought in small and dispersed groups of loose order. Continuous activities were directed against the population of areas controlled by them. They tried to force the population to cooperate either by propaganda or through terror.

It was in the northern portion of what is now Yugoslavia, in the area of the then independent state of Croatia, that the partisans fought for the longest time.

At first (1941) local partisan units came into existence. They were active only in their own areas in formations of varying size. Thus the territorial forces of partisans were dispersed throughout the rebellious area of the state. They had hiding places in their zones of operations, and many partisans even lived in sympathizing farms or villages when not in action.

With the growth of the partisan forces, new mobile brigades came into being. They made their retreat in hiding places such as deep forests, swamp areas, or mountainous areas.

They were able to remain in these areas for long periods of time, undisturbed by the enemy. There, they could reorganize and receive weapons from foreign countries. Since their positions were widely dispersed they were not bothered by enemy aircraft attacks.

Counteraction

For efficient antipartisan actions against their main forces such as these represented, in the future it will be necessary to employ not only special task forces but also ordinary army units of sufficient strength. After successful defeat of major partisan forces, mobile reserves must be employed in the tireless pursuit of the defeated partisans. Encirclement usually is impossible, particularly in mountain country. The partisans generally are able to detect the weakest spots of the advance because of their excellent knowledge of the terrain

and are able to break through the encircling front.

Partisan Inspired Rebellion

It is impossible to devise organizational measures for the execution of a defense against partisans. This will have to be adapted to the characteristics and conditions of the time in each country or state.

We may accept, however, the following guiding principles:

Tactics in antipartisan warfare are similar to those employed by the partisans. The objective, of course, is contrary to that of the partisans. It aims to destroy and impede all partisan activities as soon and as thoroughly as possible. First of all, this requires offensive warfare. Furthermore, specially trained, very mobile, and physically strong "special task force units" have to be employed as soon as the rebellion breaks out.

These formations differ with regard to employment and strength. They would be organized only when needed and would consist of men trained in guerrilla warfare. Officers and enlisted men have to be screened very carefully with regard to political tendencies and activities. If possible, they should be employed in their former home areas and localities. Officers who are clear of political suspicion may be taken from the reserve. Usually, they have better contact with the people. Enlisted men, however, since they have to be highly qualified, should not be taken from the reserves except for volunteers.

Since forces would be organized partly or completely from volunteers they would acquire the character of a militia. The structure and combat characteristics of partisans require that such a militia be qualified to fight against partisans and should be carefully prepared for this task.

Systems

Experience shows that two types of special formations will be needed immediately to fight the partisans. They would

be organized according to the *local* and the *elastic* systems.

The *local* system is the basis for "partisan defense units." They consist of men with knowledge of the local area. Here, even older people may be accepted as volunteers. The partisan defense units should be organized according to necessity into platoons, companies, or understrength battalions. They are equipped with small arms. Their mission is to fight and destroy the small groups of partisans appearing in their environment. For combined action several of these neighboring units could be placed under a territorial command. They represent a real home defense.

The other system, the so-called *elastic* system, calls for "fast detachments" or "flying columns." Their task is the offensive war. They have to fight all territorial and mobile forces of the partisans constantly. They are always on the move for they must discover the partisan in his hiding places and hunt him down if he avoids the fight. Since fights usually take place in broken ground, such as mountains, deep forests, or swamp areas, and often without any communication, the flying column has to be organized more or less similar to the mountain divisions of some European countries, but with greater mobility.

Small brigade-like formations of two or three small battalions of up to 300 men are well-adapted to this mission. Placed under the immediate command of the brigade are three to four small companies or half-companies equipped with mortars and recoilless launchers, communication and reconnaissance elements, pioneer and first aid units, and a light mountain battery or half-battery. In addition, each flying column should have its own shock troops. The size of the flying column will depend entirely upon the area in which it will operate. Its strength, according to the number of battalions, would be from 1,200 to 1,500 men.

Mobility

Strategical mechanization of the flying column would not help much as movements will take place mostly in impassable areas with poor communications. If a quick maneuver is recommended, however, transport trucks should be kept ready at the point of departure or in towns in the vicinity (with the police, for example).

Sometimes conditions call for quick combat action in difficult terrain. If a smaller force would suffice for this mission, then employment of paratroopers could be considered.

Quick changes of position require the smallest possible logistical tail. The only supplies needed are rations, and ammunition for small arms, lighter mortars, and small mountain guns.

The flying column has to move in the terrain exactly as do the partisans. Of course, it will not be stationed anywhere permanently, although it should operate from a "base." This base should be located near the center of the area which is to be cleared. Another task of a small group of the flying column would be spreading propaganda among the population.

Regular German troops—when stationed in occupied Croatian and Russian territories for considerable periods of time—were very effective in the control of partisans. The short-term employment of withdrawn frontline troops, however, brought only very weak and temporary results in such areas. Those troops being transferred from the front temporarily did not have any knowledge and experience in partisan warfare. This fact probably will apply in the future, as well.

Little help can be expected from the air force in partisan war. The reconnaissance service will not be of much use as most movements occur during the night. Fighter-bomber aircraft will not have good targets because of the manner of combat of the partisans. In daytime they travel only in forests and under cover. If they

are out in the open, they offer only small and dispersed groups as targets. Air transport, however, often is of great use for a quick movement of small units (paratroopers). The same applies to the supply of troops encircled by partisans or on duty in inaccessible mountain areas.

Summary

There is no question about the possibility of partisan war in any of the western countries in case of an outbreak of war with a Communist nation. Each country faced with such a possibility has the duty, therefore, of preparing for it in peacetime. This action will avoid the shock of a sudden partisan rebellion.

The following organizational measures may be considered in peacetime in countries not guided by Communists.

1. Institution of an independent supreme central command for antipartisan defense. This command remains under the military authority of the army command.

2. Close cooperation between this central authority and the government intelligence services (including local and other police forces).

3. An intelligence and communications service for the antipartisan forces themselves. Another service would be required for propaganda activities among the populace. The propaganda should be spread systematically and on a healthy and efficient basis, but not overdone. All this is within the wide range of organizational duties of the central command.

In case of war between other nations, or rebellion by partisans in a nation which is itself not involved in the war, there must be:

1. Immediate organization of antipartisan formations called for above.

2. Changeover of a part of the "military central authority for antipartisan war" to a "supreme command for antipartisan activities" placed under the immediate command of the supreme commanding staff of

the army and, in case of war, under the supreme command of operations.

The over-all result of these studies is the demand for commando troops considerably different in structure from ordinary army formations. These commandos are necessary for the war against partisans, who fight a modern and advanced

guerrilla war. Above all, they must be as free and independent as possible from all kinds of intermediary authorities to permit quick and decisive action. The unforeseen events and situations which occur in modern partisan wars usually will demand independent action and quick movement.

The Role of Naval Forces in the Defense of Europe

Digested by the MILITARY REVIEW from a copyrighted article by Admiral A. Sala in "Revue Militaire Générale" (France) May 1957. Translation by Mr. LaVergne Dale, Leavenworth, Kansas.

THE importance of naval forces in the atomic age often is underestimated, even contested. Some believe that the advent of nuclear weapons and of remote controlled missiles will sound the death knell of naval power. Others, who consider the air arm as the only one that still will be of any worth in the future, announce the imminent decline of both ground and naval forces.

My intention is to point out, briefly, the capital role which naval forces play in the present system of defense of the NATO nations, and particularly of the European nations, and to show that the importance of this role possesses a fundamental and permanent character which the evolution of weapons and equipment will not modify in the years to come.

To understand the place occupied by the factor "sea" in NATO's strategy, one needs only to look at a map. Between the two groups of nations which form the alliance extends the vast expanses of the Atlantic Ocean, a natural link which could become a redoubtable obstacle.

The peninsula of western Europe is largely tributary to the sea from the Arctic Ocean to the Mediterranean and Black Seas. The NATO nations constituting it all have access to open seas, while the massive Soviet bloc possesses only narrow windows opening on the open sea.

It is by way of the sea that the supplies would be carried which would be indispensable to the life of these nations in time of war as in time of peace. It is by sea that the reinforcements, ammunition, supplies, and fuel destined for the ground and air forces in operation would arrive.

Transport Requirements

A few figures suffice to show the extent to which the life of the nations of the alliance is dependent on the free use of the sea:

Of a total world tonnage of 100 million, their merchant fleets amount to 65 million tons, 25 million of which are represented by the overseas fleets and 40 by those of the European countries.

In time of peace nearly 1,000 merchant vessels flying allied flags move daily through the English Channel, while more than 1,000 are stationed in river ports. In the Mediterranean approximately 500 merchant vessels (50 percent of which are oil tankers) are under way on the sea and an equal number are in the ports.

Also in peacetime 300,000 tons of merchandise enter daily into NATO's continental European ports, 80,000 tons of which are petroleum products.

In time of war these figures would be considerably higher.

During the course of the last World War, 4,300,000 troops were transported from the United States to Europe and 126 million tons of American matériel were unloaded from vessels in Europe.

The airplane comes far from taking the place of a ship for such transport missions. It has been calculated that it would require 20 multimotor transport planes to take the place of one merchant vessel on the Atlantic and that each would barely be able to carry the load of fuel necessary for its return flight.

An indispensable zone of communication, the sea also constitutes the maneuvering area of the naval forces whose mission would be to support the ground and air forces.

The importance of this communication and support—a capital role in conventional warfare—would be greater in a nuclear war which would result in an enormous crippling of both railway and highway networks from the very outset.

Authoritative military thinkers are convinced of this. Thus during the course of a talk on "The Panorama of War in a Nuclear Age," given at the Royal United Service Institution in London (reprinted in MR, Mar 1957, p 73) Field Marshal Montgomery stated:

It is clear that as time goes on, movement of any degree in unlimited nuclear war will be possible only in the air and on the sea. . . .

We must now exploit the sea in the search for mobility. A study of a global map shows at once the enormous advantage conferred on the side which has freedom of movement across the water areas of the world. On the seas the effect of "fall-out" is not a serious factor and will not prevent movement.

Fixed nuclear launching sites on land will be vulnerable; on the seas all launch-

ing sites can be mobile and these will not be easy to locate and destroy.

The longer I study this problem, the more I reach the conclusion that airpower and seapower will provide the main offensive punch in unlimited nuclear war of the future. . . .

The sea must be exploited increasingly to give surface strategical mobility and to provide mobile launching sites for nuclear weapons.

No one contests the fact that freedom of communications on the oceans will be more necessary than ever to the nations of the alliance during the course of a future conflict. But do the allies possess the naval and airpower that would enable them to ensure freedom of the seas?

(The Soviet Approach)

The Russians, who by tradition and temperament had never in the course of history been drawn to the sea, for the past 10 years have made and are continuing to make a considerable effort to construct and arm a large, powerful, and effective fleet. Today, it has attained a tonnage of nearly 1,800,000 tons and comprises a total personnel strength of 800,000 men (of whom 100,000 are in naval aviation).

Their submarine fleet is composed of more than 500 submarines, more than half of which are long-range, and is increased each year by 60 to 70 new units and accompanied by some 30 submarine tenders.

Why should not these figures give us something to think about? It is inconceivable that in the financial, technical, and human domains the Soviets should make the colossal effort required for the construction of such a fleet if the firm intention of using it did not enter into their strategic plans.

If one will but recall the fact that in September 1939 Germany possessed only 57 submarines—of which only 22 were capable of operating in the Atlantic—and that her 820 submarines which went into

action during the four and one-half years of war sank close to 3,000 Allied vessels representing a total of 15 million tons, one has no difficulty in imagining the ravages the Russian fleet could produce on the oceans. A large number of her vessels, many of which would be missile launchers, could be dispersed before the opening of hostilities and thus would escape the atomic bombing of their bases.

In the period of general disorganization which would follow the nuclear exchange of the first few days, the Russian submarine fleet would constitute an intact offensive force capable of operating for several months. Therefore, it would imperil the allied communication lines at the very moment when it would be more important than ever to ensure their protection.

The naval arm has long been neglected by the governments of Russia, but the present Soviet masters are fully convinced of its importance and proclaim it. Thus Marshal Georgi Zhukov declared before the 20th Congress of the Communist Party at Moscow:

"In a future war the battle on the seas will possess an importance incommensurably greater than during the last war."

And thus the USSR, in contrast to the NATO countries which have no need of the sea for living, since the Second World War has constructed a fleet which is second in strength only to that of the United States.

SACEUR

The naval responsibilities of the Supreme Allied Commander Europe (SACEUR) extend over an immense sector, from the North Cape to the Middle East and to the Caucasus, and include three seas, the Baltic, the Mediterranean, and the Black Seas.

This largely maritime character of the command of SACEUR often is lost from view. Of the four great commands which are subordinate to the supreme command,

one of them, that of the Mediterranean, is exclusively naval and air-naval and those of the North and South are of a strongly marked maritime character. Only the Central European zone is dominantly of ground and air character. It also is this zone which contains some of the greatest ports of Europe (and of the world): Antwerp, Rotterdam, and Hamburg. It is here that the great convoys for supply of the civil population and armies would arrive, and the security of its northern flank would demand absolute control of the North Sea and of the Baltic.

To the maritime missions directly incumbent on SACEUR are added all those which stem from the necessity of close cooperation with the two great adjoining commands (Atlantic and Channel) and with the national general staffs in all matters concerning the protection of convoys, the defense of ports, and the support of ground, air, and amphibious operations.

As is known, the responsibilities of the Supreme Allied Commander Atlantic (SACLANT) extend from the North Pole to the Tropic of Cancer, and from the coastal waters of North America to those of Africa and Europe as far as the English Channel and the approaches of the British Isles. The command of the English Channel and of the Lower North Sea is exercised jointly by a British admiral and a British air marshal under the authority of the "Channel Committee" composed of the Belgian, French, Dutch, and British naval general staff chiefs.

These are the two commanders in chief whose missions in time of war would be to ensure freedom of communications in the Atlantic, the English Channel, the North Sea, and the support of the operations conducted by SACEUR, and with whom the latter also must cooperate closely in peacetime.

The missions of the commander in chief in Europe in the naval domain are in-

scribed in pertinent geography. A quick examination from north to south brings out their differences and their importance.

The North

In the north, on the White Sea and the Barents Sea, the Russians maintain a powerful and well-balanced fleet which comprises cruisers, destroyers, and about 100 long-range submarines. This fleet, along with that of the Pacific, is the only one which has access to the open sea.

It is probable that the Soviets would attempt at the very beginning of hostilities to gain a footing on the coasts of Norway in order to establish advanced bases for their submarines.

These coasts are abrupt, broken by deep fiords, and bordered by innumerable islands. Their surveillance, rendered still more difficult by generally unfavorable meteorological conditions, would be the responsibility of the Norwegian naval forces, whose duty also would be to ensure protection against submarine attacks on coastal sea routes which are more necessary in these regions since land routes are mediocre and insufficient.

Farther to the south the barring of the Baltic straits and the campaign aimed at preventing the Russian forces based there from use of the Baltic, constitute two major problems for SACEUR. It is here that the renascent German naval forces will have a principal role to play. In the entire zone of the Allied Command in Europe, there is no region that will have greater call for "combined-arms" action than this. This fact, joined with difficulties arising from the pivotal region between the Northern European and the Central European Commands, poses very delicate problems which have not been solved.]

The Central Zone

The Central European Command has few direct maritime responsibilities, but it is dependent largely on the security of the communication lines of the English

Channel and the North Sea which terminate in the large ports of its zone. On the other hand, all the problems which concern the commanders in chief of the English Channel concern SACEUR, and the closest contact must be maintained between these high authorities even in time of peace.

The Rhine, with its vast network of tributaries and canals, constitutes one of the most powerful complexes of navigable interior waterways in the world. At the end of 1955 the merchant fleet of the Rhine comprised more than 10,000 various types of watercraft of more than six million tons. The protection of this precious tonnage poses problems which naval personnel are best qualified to tackle and solve. This would be one of the tasks of the allied river fleets; the other would be the operation of transport means for ensuring the movement of troops and matériel from one shore to the other.

The South

The Southern European Command zone is entirely bordered by the Mediterranean. The coasts of Italy, Greece, and Turkey stretch along the Mediterranean and the Black Seas for a distance of more than 4,000 nautical miles.

For the defense operations of this immense sector, the Commander in Chief Allied Forces Southern Europe (CINC-SOUTH) has the powerful American Sixth Fleet which is always on a war footing. It comprises airplane carriers, cruisers, and destroyers of the most modern type as well as amphibious forces which possess their own supply means. Its shipborne planes are able to carry the atom bomb great distances against the enemy.

This extremely mobile, very strongly protected fleet, which is endowed with a redoubtable offensive capacity, is a major trump in the hands of the Southern European commander in chief. It also is the only naval force he possesses. In time of

war the other naval forces in the Mediterranean would be under the orders of the commander in chief of the Mediterranean whose headquarters is on Malta.

The Mediterranean is vital for the transportation of food, ammunition, and fuel supplies to Greece and Turkey, a route whose security would have to be maintained in the face of a considerable air and submarine threat.

It is the only possible zone of communication between France proper and North Africa—a zone which is also wholly exposed to the enemy's air and submarine threat.

Further, the Mediterranean is the deployment and maneuver zone of any attack force ready to bring its support to the operations of the Southern European theater. This includes the American Sixth Fleet whose great offensive capacity we have mentioned.

Control of the Mediterranean implies, above all, the closing of the Bosphorus and of the Dardanelles. The loss of the Straits, resulting in the possibility of the adversary sending out large surface and submarine forces which he maintains in the Black Sea, could have extremely grave consequences for the allies. It would endanger the security of their lines of communication and permit the enemy to attack them on their southern flank.

As in the Baltic, the Soviets maintain in the Black Sea a large fleet composed of some half score of cruisers, numerous destroyers, and approximately 80 submarines, more than half of which are long-range. The size of this fleet, much greater than that which would be necessary for operations confined to the Black Sea where the allies have very limited naval forces, is not justifiable except on the assumption that the forcing of the Straits has priority in the Russian strategic plans.

Such are the principal tasks which would devolve on the naval forces of the supreme commander in Europe. These forces will

have to count on the support of SACLANT especially in the northernmost part of the northern zone. They will need the support of the commander in chief of the English Channel, as well as the support of NATO's air forces, both for attacking enemy bases and for attempting to destroy him at sea.

Increasing Importance

The importance of a naval force that is always ready to go into action as an element of NATO's defense "shield" cannot reasonably be doubted. Its importance as a "preventive" element cannot but increase in pace with the evolution of naval armaments and techniques.

Shipborne aviation, multimotor jet hydroplanes, and guided missile launching vessels will be unquestionably superior to fixed bases and launching platforms on land, which are much more vulnerable. The "preventive" must not be susceptible to surprise attack, and to that end must possess the characteristics which are precisely those of the naval arm—capacity for dispersion, mobility, flexibility of employment, and discretion.

Current technical revolution will make naval forces a steadily increasing factor of the military strength of a country. The capital influence of naval power in a future conflict, and especially in the defense of free Europe, cannot be contested by any informed mind. It is true that modern naval forces cost dearly. In the face of the technical and financial effort represented by the construction, operation, and maintenance of a fleet, some ask if such an effort is worthwhile.

Some Questions

Of those who doubt, and as a sort of conclusion, I should like to ask the following questions:

1. Knowing that the initiative and, therefore, the factor of surprise would belong to the adversary, do they think it wise to count exclusively on fixed installa-

tions on land for launching the atomic reply and are they ready to abandon the flexibility that would be offered by the naval reply?

2. Knowing the naval strength of the adversary, are they ready to abandon to him control of the seas, which he is prepared to exploit?

3. Do they believe that the Russians have undertaken the construction of 1,000 submarines without the intention of using them?

4. Are they ready to leave to the Russians the possibility of launching an attack by sea in any region where they had need of increased offensive power?

5. In a period of tension or in a limited

conflict is it not essential to be able to show and, if necessary, make prompt use of one's military strength at any point in the world, including the ocean areas?

We are of the opinion that the answers to these few simple questions will suffice for showing why NATO requires well-balanced naval forces capable of ensuring free use of the sea, and at the same time barring it to its adversary.

The naval and air-naval forces thus required are considerable and must be ready to be placed in action immediately. It is only by these means that the nations of the Atlantic Pact will be able to exploit the inestimable strategic advantage conferred on them by geography.

Implications of Nuclear Weapons in Total War

Digested by the MILITARY REVIEW from a copyrighted* article by Dr. Bernard Brodie in "Royal Canadian Air Force Staff College Journal" 1957. Dr. Brodie is a member of the US Rand Corporation.

PEOPLE often speak of atomic explosives as the most potent military invention "since gunpowder." But such a comparison inflates the importance of even so epoch-making an event as the introduction of gunpowder.

The people who lived through the first military use of gunpowder sometime in the early part of the 14th century seem to have been quite unexcited about it, and actually failed to record the occasion. Not until a century later, at the siege of Orleans in 1428-29, do we find firearms—in this case siege guns—playing a major part in the battle, although still an indecisive one. In leading the final storming of that city, Joan of Arc was wounded by an arrow.

Gunpowder often is said to have established the superiority of the infantryman over the armored knight, and thus to have helped spell the death of feudalism. But the ascendancy of the infantryman, even

without firearms, was in fact demonstrated effectively by English archers at Crecy (1346), Poitiers (1356), and Agincourt (1415), and during the same period by other peasants elsewhere in Europe.

A shrewder interpretation was held that it was not firearms but the reintroduction of discipline on the battlefield—lost since Roman times—that caused the demise of the armored, mounted knight.

When in 1605—three centuries after the introduction of firearms—Cervantes published the first part of the great novel that buried in mockery the Age of Chivalry, the flintlock had not yet been invented. Field artillery still was to prove its worth; it did not become important until the Seven Years' War in the middle of the 18th century. As late as the American Revolution, so sensible a man as Benjamin Franklin was able seriously to consider the wisdom of arming the Continental soldiers with bows and arrows rather than with the cumbersome, slow-firing, unreliable, and

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grossly inaccurate muskets. Not until the middle of the 19th century—five centuries after the first military use of gunpowder—did we enter the age of modern firearms, with the perfecting of breechloading and rifling and, in artillery pieces, of explosive projectiles.

Evolution

When we speak of the revolution wrought by gunpowder, therefore, we are talking about something that required centuries to accomplish and centuries of perspective to discern. Yet the gradualness of the development, with all the opportunities it permitted for doctrinal adjustment in the military arts, still is not the crux of the matter. The gun and its relatives remained from first to last strictly *tactical* weapons, gradually displacing weapons such as the battering-ram, the arrow, the sword, and the lance, but only by proving superior in exactly the same functions that those weapons had exercised on the battlefield.

At least until World War I—which for the first time produced the phenomenon of nationwide continuous lines that could not be outflanked—the study of military strategy, and frequently even of the grand tactics of battles both on land and at sea, could proceed profitably from the study of campaigns going back to antiquity. The thesis that “methods change but principles are unchanging” had much to justify it, because methods did not change very much, or at any rate not too abruptly. The application of lessons of the past to current and predicted military problems always required a proper appreciation of changed technological conditions, but to the more reflective and objective students of war such adaptation offered no great difficulty, at least until the advent of nuclear weapons.

Even before the atom bomb the airplane threatened to take war away from the battlefield, and Douhet and his followers proclaimed that it had done so. But be-

cause of the limitations of the high-explosive and incendiary weapons fired and dropped from aircraft in two World Wars, it took time to achieve decisive results. During that time aircraft had to fight for command of the air, and land and naval campaigns unfolded in their old accustomed fashion, profoundly affected by the new arm as they had always been by each other, but, nevertheless, retaining their essential and distinctive characteristics.

Instead of taking war away from the battlefield, in other words, the airplane only added a new area of battle behind the fronts, and a third dimension to those already prevailing on land and at sea. The science of strategy which had always been divisible into two parts was now divisible into three. For the two traditional forms of war the basic treatises had been written and needed only to be modified. Air strategy still awaited its Mahan—for Douhet's philosophy, however farsighted, had proved critically deficient—but the early appearance of the new air philosopher confidently could be expected. The air experience of World War II was sufficient in bulk and variety to provide him with the necessary materials. But instead the atom bomb came and changed everything.

The Atomic Revolution

Few people were unexcited or unimpressed by atomic weapons. That something tremendously important had happened was understood immediately by almost everyone. Interpretations of the military significance of the new weapons naturally varied, but even the most conservative saw nothing inappropriate or extravagant in such extraordinary consultations and decisions as resulted in the Truman-Attlee-King Declaration of 15 November 1945, or the Baruch Proposals before the United Nations in the following year. Then the MacMahon Act set up the Atomic Energy Commission, a separate and markedly independent government

agency hedged about by all types of special provisions, for the manufacture and development of atomic weapons. Nothing like this had ever happened before; but photographs of the destruction wrought at Hiroshima and Nagasaki had been spread across the land, and few persons were unaffected by the thought that the damage had been done by a single aircraft in each case.

This was the response evoked by the explosion of two atom bombs over Japan (plus the simultaneously released news of the test shot at Alamogordo) at a time when few if any more were known to exist. In retrospect, it is apparent too that the more conservative of the opinions then expressed on the implications of atomic weapons were, in the main, wedded to presumptions that soon were to be disproved; for example, that the bomb was fated to remain scarce, extremely costly, bulky and difficult to deliver, and limited to about the same power and spatial effectiveness as the Nagasaki bomb.

In an age that had grown accustomed to rapid advances in military technology, how remarkable was this immediate and almost universal consensus that the atom bomb was different and epochal. Equally striking was the fact that the invention caused the greatest forebodings in the hearts of the people who first possessed it and benefited from it. The thought that it represented a fabulous and mostly American scientific and engineering accomplishment, that apparently it had helped to end World War II, and that the United States had, for the time being, a monopoly on it seemed to cause no exhilaration among Americans.

Subsequent events neither undermined the early consensus on the importance of the new weapon nor qualified the misgivings. On the contrary, the first decade of the atomic age saw the collapse of the American monopoly, of the myth of inevitable scarcity, and of reasonable hopes

for international atomic disarmament. It also saw the development of the thermonuclear weapon in both major camps. If at the end of that decade one looked back at the opinions expressed so voluminously at the beginning of it, one found almost none that had proved too extravagant. Only the conservative guesses had proved to be the hopelessly wrong ones.

It is no longer possible to distinguish between the new weapons on one hand and the "battle-tested" or "tried and true" ones on the other, because in this new world no weapons are tried and tested. The hand rifle, the field gun, and the tank, as well as the infantry division or combat team that uses them, are at least as much on trial in the age of atomic warfare as is the atom bomb itself; indeed, they are much more so.

The Thermonuclear Age

Since we are now well-launched in the thermonuclear age, we might first ask what differences, if any, the thermonuclear or hydrogen bomb must make for our strategic predictions. We have been living with the fission bomb for more than a decade, and it may well be that the fusion type introduces nothing essentially new other than a greater economy of destruction along patterns already established. Unfortunately, that is not the case.

No doubt the strategic implications of the first atom bombs were radical in the extreme, and it was right at the time to stress the drastic nature of the change. The utility of strategic bombing as a way of war no longer could be questioned. It at once became, incontrovertibly, the dominant form of war. A strategic bombing program could be carried through entirely with air forces existing at the outset of a war, and at a speed which, however variously estimated, would be phenomenal by any previous standard. Also, it could be carried out successfully over any distance that might separate the powers involved. These conclusions represented change

enough from the conditions of World War II.

Nevertheless, fission bombs were sufficiently limited in power to make it appear necessary to deliver a substantial number of them to achieve decisive and certain results. That, in turn, made it possible to visualize a meaningful (although hardly satisfactory) air defense, both active and passive. It was, therefore, still necessary to think in terms of a real struggle for command of the air in the old Douhet sense. It was also still necessary to apply—in much modified form—the lore so painfully acquired in World War II concerning target selection for a strategic bombing campaign. Finally, the functions of ground and naval forces, clearly and markedly affected by the new weapons, still appeared vital.

Even these tenuous ties with the past were threatened when it became known that thermonuclear bombs were not only feasible but apparently also inexpensive enough to justify manufacture in very substantial numbers. Possibly the feeling that the H-bomb was distinctively new and significantly different from the A-bomb argued in part an underestimation of the A-bomb. But when one had to confront a basic change in circumstances, it helps if it is unequivocal.

The "Mike" shot of the Operation Ivy series, set off on 7 November 1952, caused the complete disappearance of the small island of Elugelab on which the thermonuclear device was placed. In its place was left an underwater crater over one mile across and about 175 feet deep at the center, or, as was later publicly stated, large enough to hold 14 buildings the size of the Pentagon. It was announced that the amount of energy released was over five million tons (or five "megatons") of TNT equivalent, and the fireball itself was about three and one-half miles across (as compared to about one-sixth of a mile for a "nominal" 20-kiloton bomb).

At the time this information was released, almost a year and a half after the event, at least one other American thermonuclear explosion had taken place (the "Bravo" shot in the *Castle* series on 1 March 1954) and it was reported to be several times more powerful than "Mike." Small wonder that the Atomic Energy Commission chairman, Rear Admiral Lewis L. Strauss, stated on that occasion that the H-bombs the United States could build and deliver would be individually capable of wiping out any city in the world. Subsequently, the world learned that the March 1954 shot also had produced an unexpectedly large amount of radioactive debris which was deposited as "fallout" of dangerous and even lethal intensity over thousands of square miles and up to distances of 200 miles or more downwind from the explosion.

Target Selection

It became apparent that certain controversial military questions that had remained pertinent in the fission bomb era were no longer worth tarrying over. Chief among these were the questions inherited from World War II concerning the appropriate selection of industrial target systems. Industrial concentrations usually are associated with cities and vice versa, and since a thermonuclear bomb exploded near the center of a city would, as a rule, effectively eliminate the industrial activities associated with that city, there is hardly much point in asking which industries should be hit and in what order, or which particular facilities within any industry.

Once the question of *whether* to attack the enemy's economy or "mobilization base" is answered affirmatively, that is, once we are embarked upon an unrestricted nuclear war, the question of *what* to hit is all too simple to answer. We simply select the enemy's cities, which constitute the easiest targets to find anyway. Of course, the enemy's strategic air force must be the top priority target in terms

of time, and possibly also in weight of bombs, but destroying the enemy's air force (if it can be done) is a defensive move essentially, and as such demands some kind of sequential action.

Perhaps there is nothing in logic to make such a sequence inevitable, but it is very likely to be considered a practical necessity. The attacker rarely could count with high confidence on fully eliminating the enemy air force, even if he struck first. He would, therefore, feel obliged to begin the countereconomy competition before he knew the results of the counter air force strike. In any case, such decision as we are implying would have to be made well before hostilities began, which is to say only that emergency war plans intended to cover the opening phases of possible future hostilities are, and should be, prepared in peacetime and periodically revised. As a matter of practical strategic planning, one naturally would expect that even where a counter air force attack was given top priority in the relevant war plan, a countereconomy attack would be integrated with it to some degree.

In fact, since many major enemy airfields are bound to be near cities, the distinction in priority in such instances is likely to be academic. It is idle to talk about strategies being counterforce strategies, as distinct from countereconomy or counterpopulation strategies, unless we actually find ourselves taking deliberate measures to refrain from injuring cities. It can hardly matter much to the populations involved whether the destruction of cities is a byproduct of the destruction of airfields or vice versa.

No doubt there would be a significant difference in ultimate results between a strategy that was aimed primarily at the enemy air force and one aimed chiefly at population, even if a lot of people were killed in both. However, it must be remembered that in striking at an enemy strategic air force, an attacker normally

will be obliged to hit a great many more airfields than those indicated to be major strategic airbases. He must assume in advance that a good deal of dispersion of enemy aircraft will have taken place as a result either of warning or of routine operating procedures. And in striking at airfields near cities, he might choose to use some quite large thermonuclear weapons, especially if he tended to regard as a "bonus" any damage achieved in addition to that primarily sought after.

Cities as Targets

The number of cities that account for the so-called economic war potential of either the United States or the USSR is small: possibly 50 or less, and certainly not over 200. The range in these figures is the result of the varying weight that can be given to certain tangible but difficult to measure factors, such as that of interdependence. The leading 54 American "metropolitan areas" (as defined by the Census Bureau) contain over 60 percent of the Nation's industrial capital and a population of 65 million, including a disproportionate number of the people whose special skills are associated with large-scale production.

The Census Bureau lists 170 metropolitan areas in the United States which contain over 75 percent of industrial capital and 55 percent of the Nation's population. We must note that by far the greater portion of these cities are concentrated in the eastern and especially the northeastern part of the United States where most of the nonurban populations may be subject to overlapping patterns of radioactive fallout. The concentration of industry in Russian cities, and the concentration of cities and populations in the western part of their national area, make of the Soviet Union a target area roughly comparable to the United States.

The great Hamburg raids of July 1943, which were so tremendous a shock to the entire German nation, caused the destruc-

tion of about 50 percent of the city's housing and resulted in casualties amounting to about three percent of the population. A single H-bomb of anything above one-megaton yield bursting within the confines of a city such as Hamburg would cause a degree of housing destruction much higher than 50 percent, and unless the city had been evacuated in advance the proportion of casualties to housing destroyed certainly would be far greater than it was at Hamburg.

More Casualties

The latter fact underlines one of the distinctive features of nuclear weapons. There are at least four reasons why casualty rates with nuclear weapons are likely to be far greater in relation to property destroyed than was true of nonatomic bombing:

1. Warning time is likely to be less (or nonexistent) unless the attacker deliberately offers it before attacking.

2. The *duration* of an attack at any one place literally will be a single instant, in contrast to the several hours' duration of a World War II type of attack.

3. Shelters capable of furnishing good protection against high-explosive bombs might be of no use at all within the fireball radius of a large ground-burst nuclear weapon, or within the oxygen-consuming firestorm that such a detonation would cause.

4. Nuclear weapons have the distinctive effect of producing radioactivity, which can be lingering as well as instantaneous, and which causes casualties rather than property injury.

No doubt there are a few very large metropolitan areas in the United States and in other countries which are wide enough in area to be able to escape complete destruction by a single thermonuclear weapon. But even two or three bombs for each such area is still a small number. Concerning the choice of the size of bombs for smaller cities, we must remember that

the difference in cost between a thermonuclear bomb of, say, 10-megatons yield and a fission bomb of 200-kilotons yield usually will not be great enough to be the critical factor in determining the choice between them for distant targets. The cost difference almost certainly will be small in relation to the entire cost of the sortie.

There may be a significant weight difference between the two bombs, but for aircraft large enough to possess the ranges needed in strategic bombing, even that difference may not be important. What all this means is that "overkilling" will be cheap and, therefore, according to the military considerations normally brought to bear, no longer to be shunned.

Moreover, an amount of force-yield that would be grossly excessive for any accurately aimed bomb would make possible methods of delivery—such as the long-range ballistic missile—much less accurate, although superior in other ways, to those currently available. In these, however, the weight of the bomb or warhead is likely to be a much more critical factor than in aircraft, at least in the earlier phases of missile development.

The Central Fact

No doubt the problem of getting nuclear weapons delivered to 50, 100, or 200 widely spaced points does not look as simple to those who have to plan the operation as it does to laymen. And since enemy strategic airfields as a rule also must be hit, the total number of targets is multiplied, perhaps by several times, over the figures just suggested. But, to repeat, the bombing of enemy strategic airfields or missile-launching sites is a strictly defensive mission. The existence of such a requirement (which is by no means inevitable or absolute under all conceivable circumstances) should not be permitted to obscure the fact that with the new nuclear weapons the number of individual targets that have to be struck in order to put any nation out of business as

a producing or even functioning organism is extremely small. It is ridiculously small when measured against the standards of a period as recent as World War II. Obviously, this is the central fact to consider when appraising the apparently still disputed "decisiveness" of strategic bombing with nuclear weapons.

Broken-Backed War

The British in their 1954 *Defense White Paper* used the expressive phrase "broken-backed war" to describe what presumably would happen after the first huge exchange of thermonuclear weapons, assuming the exchange itself failed to be decisive. Various Americans have adhered to the same conception without necessarily using the phrase. The essential feature of the idea is the insistence, usually implicit, that war resources, human and mechanical, will continue to be drawn from the national "mobilization base" and that the margin of advantage that one side or the other enjoys in this respect is what will prove decisive in the end. Although the conception of "broken-backed war" appeared to be entirely abandoned in the *Defense White Paper* for 1955, which tended instead to rest everything on "deterrence," it has, nevertheless, continued to underlie and to confuse the basic structure of American and allied defense planning.

One can easily conceive of conditions in both contending camps so chaotic, following the opening reciprocal onslaughts, that the war issue will not be resolved immediately and hostilities not formally concluded. One can also picture surviving military units, including some possessing thermonuclear weapons and means of delivering them, continuing to hurl blows at the enemy to the utmost of their remaining although fast-ebbing capacity. But it is difficult to imagine such intensive continuing support from the homefront as would enable "conventional" military operations to be conducted on a large scale and over a long enough time to effect any

such large and positive purpose as "imposing the national will of the enemy," or, to use the words of former Chief of Staff, General Matthew B. Ridgway, "Carrying the fight to the enemy and defeating him."

The major premise of the "broken-backed war" conception was that the result of the initial mutual nuclear violence would be something like a draw. Otherwise, it could not fail to be decisive. The second premise (we cannot call it a minor one) was that the level of damage on both sides following the strategic nuclear bombing phase would be limited enough to permit each to equip and sustain air, ground, and naval forces of sufficient dimensions to be able to execute noteworthy military operations.

These operations presumably would be conducted at some distance from home, and would, therefore, require facilities, such as ports and associated railway terminals. Such facilities generally are found only in those larger coastal cities which certainly would be among the first targets hit in the nuclear phase. Implicit also was the further dubious assumption that somehow the nuclear phase would end cleanly—or diminish to a trivial magnitude—early in the hostilities, and at about the same time for both sides.

Another and perhaps more practical reason for questioning the "broken-backed war" conception is that no one seems to know how to plan for such a war. There are special psychological reasons why official war planners have always in times past found it almost impossibly difficult to predict a war plan on the assumption of national disaster at the outset. But in this case, even if the spirit were willing, the data and the imagination would be much too weak.

The Problem of Survival

There are, of course, numerous examples in recent history of magnificent improvisation following upon disaster, or rather upon what used to be called disaster. But

in each of those cases the means of making war, including such vital intangibles as established governmental authority operating through accustomed channels of communication, remained intact. A few battleships sunk, a few armies defeated and lost, even large territories yielded do not spell the kind of over-all disaster we have to think about for the future. There are limits to the burden that can be placed on improvisation. The improvisation which the survivors of thermonuclear attack may find it within their capacities to come up with surely will have to be occupied largely with restoring the bare means of life.

No one who has studied the German military, economic, and even social performance under strategic bombing can fail to be impressed by it. But the German capacity to absorb the blows and to take compensatory measures for the damage received depended, among other things, on their having both the time and the incentive to organize those measures. When the main weight of our strategic bombing descended upon them in the spring of 1944, they had had at least three years of serious attacks, including the terrible warning of the Hamburg raids of July 1943.

Even so, the campaign waxed only gradually to its climax, and never, even when the British-American strategic bombing forces were at the height of their power, were they able to inflict in six months of bombing the scale of destruction that would lie easily within the capability of the United States Air Force on the first day of a new war. The difference in circumstance that accounted for the French resistance in 1914 and for the collapse in 1940 were of trivial magnitude compared with the differences between preatomic and present-day strategic bombing.

No one, of course, can specify how many nuclear bombs it would take to "knock out" (assuming we know what we mean by that term) a country as large as the Soviet Union or the United States. Ana-

lytical studies of what happens under attack can do little more than suggest upper limits to the broad range of figures that might be considered reasonable. Such studies almost inevitably work with individual targets rather than with a whole national complex. They must depend on what are little more than educated guesses for various critical planning factors, including even those pertaining to the physical effects of bomb explosions. They must work with quite wide ranges of assumptions concerning such things as the size and the positioning of bombs delivered and the length of warning time.

Such studies cannot even touch the imponderables, such as popular panic and administrative disorganization, which might easily govern the end result. Those who do such work are interested as a rule in the results from the offensive or targeting point of view, and, therefore, deliberately try to be conservative in the estimates they make. One of the ways to be conservative is to dismiss consideration of all imponderables as unmeasurable.

At the other end of the scale, methodologically speaking, is a judgment such as the following in *Strategy for the West* by Marshal of the Royal Air Force Sir John Slessor:

I have the perhaps somewhat unenviable advantage of an experience, which fortunately has been denied to most people, of being in a city which was literally wiped out, with most of its inhabitants, in 55 seconds by the great earthquake in Baluchistan in 1935, a far more effective blitz than anything laid on by either side in the late war, except Hiroshima and Nagasaki. When people talk lightheartedly about that sort of thing on a widespread scale not being decisive, I have to tell them with respect that they do not know what they are talking about. No country could survive a month of Quetta earthquakes on all its main centers of population and remain capable of organized resistance.

Slessor is describing a catastrophe that is free of the additional terrible menace of lingering radioactivity.

It must be repeated that Sir John's intuitive conviction—which in fact accords with the average layman's judgment—reflects at least one tacit assumption concerning defenses. In general, the assumption is that the prospects for the radical improvement of both active and passive defenses against nuclear weapons are not bright.

Defense

The coming of the A-bomb gave a fantastic lead to the offense over the defense; subsequent developments in nuclear weapons have tended to further that advantage. A proposed system of defense which looked interesting one year against fission bombs looked altogether useless and wasteful the next, when thermonuclear weapons also had to be taken into account. This movement favoring the offense by no means has run its course, even considering manned aircraft only. However, we are told also that the advent of the operational long-range ballistic missile with nuclear warhead is only a matter of time. There seem to be very few ideas afloat about how to erect effective active defenses against that.

In passive defenses, such as dispersion or "hardening," the problem is to discover and adopt measures that are not easily neutralized simply by some modest increase in the quantities or yields of the bombs delivered by the enemy. The growth of national nuclear stockpiles is practically irrepressible, and while delivery capabilities do not normally expand with the same exuberance, it is, nevertheless, likely to be far easier and much less costly for one side to double the number of bombs-on-target than for the other to double by dispersion the number of targets the enemy must hit.

The hardening of targets by putting shelters around them may be very expen-

sive, but it would be effective over a wide range of bombs delivered figures. Human casualty rates may be very much reduced by resort to deep shelters, provided there is sufficient warning time and preparation beforehand to sustain life during and after immurement in those shelters.

Let us, however, finally note the fact that there are enormous impediments—psychological, political, economic, and above all doctrinal—to the adoption of sufficiently drastic measures for defense. The proof of that lies in all we have conspicuously failed to do after 12 years of living with the atom bomb. New and effective stimuli to action may turn up, but some exceedingly powerful ones have failed to move us.

The success of the offensive-defensive, the so-called blunting mission of the United States Strategic Air Force, must depend not only on a national initiative which is largely out of military hands, but also on surprise (which is impossible without initiative, yet not guaranteed by it). Other factors include intelligence, the character of enemy base-utilization patterns, and the various measures the enemy may adopt for the protection of his long-range air force.

From all this one would seem justified in drawing the following conclusion: barring revolutionary and presently unforeseen advances in air defense, an unrestricted strategic air campaign in a war in which the United States is engaged is bound to be decisive. It does not matter greatly whether the number of nuclear weapons-on-target required to guarantee decisiveness is a few score or a few hundred, because we are, even in the latter case, in realms of figures that are well within the capabilities at least of the United States (the critical factor being, of course, delivery capability rather than size of the nuclear stockpile). It is equally certain that these figures are now or soon

will be within the capabilities of one or more other powers.

Possibly our basic conclusion would be in jeopardy if the figures for required bombs-on-target went into several thousands, which would bring into question the adequacy of existing delivery systems. But since we are talking about a mix of nuclear weapons that includes a fair proportion of thermonuclear bombs, figures for a strategic bombing campaign running into the thousands of bombs-on-target are likely to be either morbidly fanciful or pointed toward a campaign aimed not merely at a simple military decision but at complete national obliteration.

Surface Operations

On the other hand, when we say that strategic bombing will be decisive, we are not using that term in its traditional sense—that is, in the sense that something is achieved which predetermines a clear victory for one side or the other. Instead, we mean that if strategic bombing occurs on the grand scale that existing and certainly future forces make possible, other kinds of military operations are likely to prove either unfeasible or superfluous or, most likely, both. The Red Army, if poised to spring, perhaps could have a certain brief career as a disembodied force even if its homeland were laid waste behind it. In such a case, however, it also would be the target of nuclear weapons of all sizes. Such an independent career would be possible only for the Red Army, since it has the advantage, denied to the ground forces of Britain and the United States, of having its main potential spheres of operation in areas contiguous to its homeland.

The point just made cannot be proved except negatively, that is, by throwing the burden of proof on those who would show us how modern armies and navies can operate effectively, and to a useful purpose, when their home territories, and certainly the larger towns thereof (in-

cluding all naval bases and ports) are masses of rubble and radioactive dust. Discussions in professional military journals of the operations of armies and navies (and even air forces) in a major war of the future almost always tacitly assume an intact homefront, or at least one where the damage is so minimal as to be irrelevant to offensive plans.

We should not discount the importance of the fact that for countries as large as the United States or the Soviet Union, the number of human beings and the amount of equipment that may escape destruction even after heavy thermonuclear attack could, in absolute terms, be quite large. Much that is valuable (for example, our highway network) is hardly even exposed to risk. Besides, we must remember always how much we do not know about this entire subject, and how many different contingencies must be considered.

Nevertheless, it seems quite safe to assume that the number of people and the kind and quantity of capital that may survive strategic attack will be important far more for determining the character and degree of national recovery following the hostilities than for controlling the subsequent course of the hostilities themselves. The *minimum* destruction and disorganization that one can reasonably expect from any unrestricted thermonuclear attack almost inevitably must be too high to permit further meaningful mobilization of warmaking capabilities. It may well prevent effective use of most of the surviving military units.

It should also be recognized once and for all that so far as predicting human casualties is concerned, we are talking about a catastrophe for which it is essentially impossible to set upper limits appreciably short of the entire population of a state. It is not only those in cities and in towns who will be exposed to risk, but, in view of the fallout effect, practically

everyone. It is simply not true that the fallout effect, where the attacker is determined to exploit it, is something that is easily met and contained.

What we are saying in effect is that although the uninjured survivors of attack may indeed be many, it is also all too easily conceivable that they may be relatively few. The latter contingency is more likely in the absence of large-scale protective measures such as neither we nor any other people have yet shown ourselves prepared to mount. But whether the survivors be many or few, in the midst of a land scarred and ruined beyond all present comprehension, they should not be expected to show much concern for the further pursuit of political-military objectives.

Ambiguity in Policies

The reader who was prepared to accept as obvious at the outset the conclusion we have labored these many pages to establish will wonder why all the bother? The answer is that there is a monumental ambiguity in public policy which reflects in part the ambiguity in the public statements of high officials. Even those who preach the catastrophic decisiveness of nuclear strategic bombing seem to find it almost impossibly difficult to grasp the full significance of what they preach. Sir John Slessor, whose trenchant comment on what to expect from nuclear strategic bombing we have already quoted, furnishes an outstanding example.

As a former Chief of Staff of the Royal Air Force, Sir John would have to be taken most seriously even if he did not merit it on the general urbanity and breadth of view so amply reflected in his writing. But he could also be abundantly quoted on the other side of the "decisiveness" question from the very same book—a book that has a special importance as perhaps the most lucid and comprehensive presentation of the "massive retaliation" doctrine to be found anywhere.

Sir John urges, to be sure, that "it is

very seldom wise to carry things to their logical conclusions, and the airmen can no doubt rely upon their comrades of the older services to assist them in resisting that temptation." Nevertheless, this distinguished airman, who regards it as "almost inconceivable" that a major war of the future fought with weapons of mass destruction (which he insists *must* be used) could last "for any length of time," still considers it very important that navies be able to carry out their traditional functions of convoy protection, which are defenses against attrition warfare and, therefore, strategically meaningful only over a considerable span of time. One wonders also why he considers it virtuous even now to profess disbelief in the thought "that airpower by itself can defeat a first-class enemy."

No doubt one answer is to be found in the only place in the book where Sir John portrays his conception of the United Kingdom under nuclear attack:

When things are really bad the people's morale is greatly sustained by the knowledge that we are giving back as good as we are getting, and this engenders a sort of combatant pride, like that of the charlady in a government office who was asked during the London blitz where her husband was—"he's in the Middle East, the bloody coward!" We must ensure that defense, as adequate as we can reasonably make it, is afforded to those areas or installations which are really vital to our survival at the outset of a war, or to our ability to nourish our essential fighting strength. Much-Binding-in-the-Marsh and Littleville, Pa., are not in that category unless they happen to contain some utterly indispensable installation, and the inhabitants must steel themselves to risks and take what may come to them, knowing that thereby they are playing as essential a part in the country's defense as the pilot in the fighter or the man behind the gun.

There is only one thing to be said about such language and imagery: it fits World War II, but it has nothing to do with thermonuclear bombs. It certainly has no pertinence for the United Kingdom which is both small in area and geographically close to the enemy. One does not have to think in terms of missiles of the future but only in terms of the V-1, the V-2, and the jet bomber to see the strongest possibility of a Britain in shambles at the end of the first hour of nuclear attack.

For countries such as the United States or the Soviet Union it probably would take a little longer. But there is no justification at all for the kind of easy optimism expressed in the following sentence:

But when it is suggested . . . that the United States could be knocked out as the arsenal of the North Atlantic Alliance, then writing as one who has been concerned for a good many years with air bombardment planning, I beg leave to say that it is nonsense.

It remains to be added that in an article entitled "The Great Deterrent and Its Limitations," published two years after the book in which these remarks were made, Sir John Slessor was seeing things in a quite different light. Among the events that had intervened between the two publications was the release of a good deal of information about thermonuclear weapons and their effects, but one must also give due credit to Sir John for a flexibility of mind that is no doubt among his special distinctions. Perhaps there also is something about the experience of being an author, especially the author of a book, that brings one intimately into the rough-and-tumble of the market place so far as ideas are concerned. Anyway, the kind of drastic conversion that Sir John underwent within two years regarding some of his fundamental beliefs is not a common occurrence among his professional colleagues, especially among those still on active duty.

As Sir John observes in the aforementioned article:

Not many people, even in the fighting services themselves, have really grasped the full tactical implications of an age in which nuclear power is the dominant strategic factor in war. There is a tendency almost subconsciously to shy away from those implications, which should not be ascribed merely to the influence of vested interest.

Need for Consistency

The sense of Emerson's famous remark about consistency being the hobgoblin of little minds has enjoyed remarkable verification in military history. Historical examples of unintelligent rejection of the novel need not detain us, except possibly to note that the catalog is long. Much more interesting for our purposes are the instances where eager acceptance of the new is coupled, not only within the same organizations but often within the same persons, with stubborn insistence upon retaining also much of the old. These are the people who on the whole have come off best when the scores were in. For their very inconsistency often has provided a hedge against wrong predictions.

The intensely conservative or reactionary are always proved wrong, because changes in armaments over the past century have been much too rapid and drastic to offer any cover to those who will not adjust. But the occasional brilliant seers who have the courage of their convictions and the analytical skill to recognize and expose inconsistency when they see it have all too often been tripped up by one or more critical assumptions which turned out to be in error, and then their own consistency worked only to make their whole logical construction dangerously wrong, as was certainly the case with Douhet.

No doubt a proper intuitive feeling for the hazards of prediction and for the terrible forfeits involved, in the military sphere, in finding oneself overcommitted

to a wrong guess, is one of the reasons why military men as a group tend to put a rather modest value on analytical brilliance as an alternative to mature military judgment. Nevertheless, there is a limit to the amount of inconsistency that is reasonable, especially since in the world

of nuclear armaments it may become, to say the least, exceedingly expensive. And if any one thing is clear from all the foregoing, it is that the strategy of "massive retaliation," as commonly understood, is, like the headsman's axe, rather too sharp a cure for ordinary ailments.

The Development of Global Strategic Factors

Translated and digested by the MILITARY REVIEW from a copyrighted article by Rear Admiral A. Lepotier in "Revue Militaire Générale" (France) April 1957.

MAN'S knowledge is growing steadily. Scientific and technical application of this knowledge has made man free from the constant individual struggle for the necessities of life. It allows him to increase the collective activities which carry him to the frontiers of a universe in which he has been confined.

From now on, man will live under the impression that he has mastered nature and will be free from the natural burdens which set a strict limit to all the activities of his ancestors. This feeling appears to be even more justified when expressed by the pilot of a supersonic plane, by the commander of a submarine driven by atomic power, by men who launch artificial satellites, or by the passenger of a stratoscrambler that crosses the North Atlantic in 10 hours.

All these impressions lead to an underestimation of the place of geography in today's human activities, particularly in the fields of politics and strategy. The point of view actually has been expressed that from now on geography would be overcome by technology, and as a result it would not have to be considered further in questions of strategy. It was said, for example, that the Russian extension of territory is no problem anymore in an age of planes that fly around the world. It has been affirmed that the traditional seaways of Suez and Gibraltar would

cease to be important key positions for supremacy in the Mediterranean for the same reasons. But this is not true.

Population

On the contrary, with a population growing at a disturbing rate the geographical factors of our universe become more and more important because this increasing population has to share the resources of this world. Recently, a world census revealed that the population increased from an estimated 500 million in 1650 to 2.6 billion in 1954, and keeps growing at the rate of about 35 million people a year. This "demographical pressure" is distributed unequally over the surface of the earth. It seems to represent one of the basic factors for some of the distressing aspects of economy, politics, and even strategy.

There are efforts to "change nature." They are aimed at an increase of surface for cultivation and industrial purposes. Should these efforts prove impossible to realize, together with birth control and the organization of peaceful transfer of people from overpopulated to unsettled regions, it also would become impossible to hold back forever the reckless expansion of undernourished masses toward new *Lebensraum*. Here, as they did in the past, only geographical factors will determine the aims of the masses.

The influence of global overpopulation upon future struggles is not the only aspect. There is also the quantitative and qualitative distribution of populations. This factor is of obvious political and strategical importance; political, religious, agricultural, mining, industrial, and other key points are determined by it.

Resources

More and more people desire a higher living standard, calling not only for proper nourishment but also for a maximum exploitation of possible resources like coal, water, oil, and uranium. Behind the resulting search for new resources and the value placed suddenly upon the known resources, however, political and strategical objectives are hidden. For example, the oil wells of the Arabian Desert are most characteristic of this development today.

However, industry's demand is not limited to sources of energy. It also requires more and more quantities of a growing variety of minerals. The rare and valuable minerals so urgently needed justify search and exploitation even in the most removed and inaccessible corners of the world, far removed from the sites of production. This creates additional loads for worldwide transportation. Due to this development, new political and strategical objectives have appeared on the scene.

The famous German "iron way" (iron loaded in Narvik) has not been forgotten. The Suez affair focused sudden attention upon the oil source of western Europe. However, there are also sources for iron, phosphates, copper, tin, nickel, chrome, manganese, lead, cobalt, uranium, graphite, quartz, wood, rubber, cotton, wool, and others. Even for the United States the iron supplies of Labrador and the Orinoco, among others, become more and more important.

The great need for raw materials results in a considerable tonnage being shipped across the seas and oceans. This

job is done by giant ships like the super-tankers with a capacity of up to 100,000 tons and the ore carriers or ships for the transportation of other minerals with a tonnage not much smaller.

Three Considerations

The evolution of these common geographical factors leads to three strategical considerations. First, it influences the political relations of the world by its development, and in the future will be an important factor in the risks and nature of rising conflicts.

Second, strategy is subject to politics and must always be ready to support the political view. This is the reason for the constant adaption of strategical action to the geopolitical situation that determines eventual goals.

Last but not least, it leads to a constant revision of the plans of operations because of new means of action at the disposition of strategy.

It has been proposed, as was said earlier, that geography is of minor importance today because strategical bombers may cross Russian territory in a few hours. Those planes, however, have to start from a base, fly toward a deliberately chosen target and—mission fulfilled—return to a base if possible. The three essentials of this mission are geographical terms.

General Galland, former Commander of the German Luftwaffe fighter force said:

Aviation is of complex technical structure. More than any other weapon it depends upon the perfect state of its bases. It requires regular supplies, quick arrival of spare parts, and perfect mechanical repair shops. Our greatest losses in Russia, for example, were not caused by fighters or antiaircraft defenses of the enemy. They were due to the great distances and the unbelievable bad state of roads, preventing proper equipment and supply of our bases.

Terrain

The technical evolution of the past decades has by no means freed strategy from the thorough study of the terrain. On the contrary, they have expanded the field that must be considered to the very limits of the world. Instead of concentrating on the map of the immediate battle area, one has to study the map of the continent, then of the hemisphere, and after that a map of the world.

However, this training will have to be accomplished without losing sight of the old conventional man-to-man combat. Intercontinental missile weapons exist today, but the bayonet and the machinegun must not be forgotten. Our reflections in front of the world map should not make us forget to look under the carpet for the microphone of the spy or the bomb of the terrorist. The man who launches the ICBM might easily slip and fall on a banana peel.

Insularity

After a thorough study of our domestic theater and the assurance of our superiority in this theater there is still much left to do. Our attention has to shift periodically to every corner of the world since everything has become only an integral part of the whole. Demographical, scientific, and technological developments have changed the geostrategic factors at this level considerably. This evolution has forced some theaters to be considered for future decisive operations that were inaccessible up to the beginning of this century.

In order to understand the great problems of our time we have to consider the geographical subdivisions of the world from the point of view of "general insularity." Findings of geopoliticians like Mackinder, Haushofer, and others underline the important and decisive role played in human history by Eurasia as the central and main island of the entire world archipelago.

Very justly it is called "world island" or "heartland" and regarded as the axis of the entire system and—together with its African annex—as the cradle of the human race. From here the latter spread out toward the periphery of the Old World and finally on toward the other, more recently emerged countries.

The great European peninsula was really a blind alley up to the 15th century. Here many different migrations from the southern parts of Asia piled up, superposed and mixed with the local population.

The atmosphere of easy life on the coasts of the Mediterranean stimulated the evolution of arts and sciences as well as technical development there. By the 15th century such a level had been reached that the west Europeans set out to the seas to discover, evaluate, and, eventually, to populate the other islands of the archipelago. The people of east Europe slowly migrated by land or water toward the extreme northeast of the main island, a region that had not been too well populated because of its severe climate.

This geographical and historical bifurcation is the main reason for the two geopolitical power blocs that share our world today. The one bloc has essentially earthbound characteristics occupying the greater part of the original central island. The other seabound bloc occupies all other islands and the American Continents, while still maintaining a foothold on the western part of the European peninsula.

The End of Expansion

Occidental Europe was the starting point of the expansion over the seas. Therefore, we are interested directly in the trans-European border that separates the east from the west. Our participation in an ever-widening worldwide communications, however, makes us equally interdependent upon everything that might happen on the other borders of the two worlds, particularly at the periphery of Eurasia

in the Alaskan-Bering Straits area. There, in clear weather, one can see the Siberian coasts of Russia from the Alaskan coasts.

The Europeans who set out to conquer the world in opposite directions inevitably met again at the other end of the universe. When the advanced guards met here not later than the beginning of the last century, few people understood the importance of this event which marked the end of the search for free territories for expansion for both parties. Sooner or later, a border would have to come into existence here between the two migrating groups that would be equal to the other already existing border on the other side of the world in Europe.

The North

Now that the "second front" between east and west was born, man had to direct his attention to the north. The pace of progress in that direction was determined by gradual technical progress helping to overcome the enormous obstacles of the polar regions.

At the beginning of World War II the progress of aviation permitted the initial conquest of the Arctic Ocean. The Northern Asians and the North Americans perceived that here, again, they were neighbors on both sides of an ocean which was to become the shortest aerial way between the two main continental islands. Here the "new front" of the north came into being. It was to be the last step in a long, long development. It is a front that has excited the active strategic attention of both blocs.

The great continental islands border the Arctic Ocean on almost all sides around the 70th parallel. In the south, however, the continental islands end in

the world ocean below the 55th parallel. They leave, therefore, between the continents and the Antarctic, a vast continuous zone of maritime communications all around the world by which the West may stay in communication with all the different parts of the world that touch any ocean at all.

After the openings of the artificial transoceanic canals of Suez and Panama, interest in the strategical seaway of the Antarctic ceased in peacetime. It is obvious, however, that modern strategy is interested in it once again for two reasons. One is the launching of supersonic ships for transport and combat that cannot pass through the canals. The other reason lies in the extreme vulnerability of these canals under present conditions of massive sabotage or long-range retaliation weapons.

Also, this strategical interoceanic seaway might attain twice its present capacity by aerial transarctic communications between the meridional extremities of Africa, America, Australia, and New Zealand, with stopping places on the Australian islands and eventually upon floating parts of the Antarctic.

The sudden entrance, or return, of polar regions to the fields of strategical interests—one as a border of air-contact of the two powers, the other as last recourse of maritime and aerial worldwide communications of the West—is the most striking example of evolution of strategical possibilities in relation to the geopolitical and technological conjuncture of our insular world. This is more and more complicated by a steady increase of population in nations unwilling to share the world's irreplaceable resources.

BOOKS OF INTEREST TO THE MILITARY READER

YUGOSLAVIA. East-Central Europe Under the Communists. Mid-European Studies Center Series. Introduction by Robert F. Byrnes. 488 Pages. Frederick A. Praeger, Inc., New York. \$8.50.

HUNGARY. East-Central Europe Under the Communists. Edited by Ernst Helmreich. 466 Pages. Frederick A. Praeger, Inc., New York. \$8.50.

BY LT COL MITCHEL GOLDENTHAL, CE

The Mid-European Studies Center, a unit of the Free Europe Committee, has completed two more volumes in its series of expert studies on Communist East-Central Europe.

Many noted scholars who have devoted their lives mastering their respective fields contributed to these books. It has been necessary for some contributors to remain anonymous for obvious security reasons.

Each volume covers the history, geography, demography, government, and economy of Yugoslavia and Hungary respectively. The reader will enjoy the highly significant and detailed studies on the political and economic culture of these countries including the ramifications of national security, education, economics, transportation, and welfare.

These volumes accurately mirror the condition of western scholarship on developments within Communist Hungary and Yugoslavia. The editors and authors have portrayed an objective and accurate descriptive analysis of what has happened in the past, and also of the effectiveness of the present governments with regard to making preparations for the future.

ROCKETS, MISSILES, AND MOONS. By Charles Coombs. 256 Pages. William Morrow & Co., Inc., New York. \$3.75.

BY LT COL GEORGE D. CARNAHAN, OrdC

Beginning with the story of an actual missile launching at Cape Canaveral, Florida, the book discusses the rockets and missiles now being used and tested. There still are awesome difficulties to overcome, however, before *reliable* intercontinental missiles and space satellites ("moons") become a reality, and these problems are explained in fascinating detail.

After covering the dilemma of defense against missiles, the author launches into a description of *Vanguard*. His final chapter is titled "Looking Forward and Upward" and starts with:

All things considered, man is already stepping across the threshold which leads into the age of true space travel. Yet the most optimistic scientists and engineers are the first to express a word of caution. You cannot simply jump off into space. You must take it in easy steps. The staircase is a long and winding one, with many an insecure and creaking tread.

Finally, on the optimistic side, he says about rockets and missiles:

Their purpose is twofold—constructive as well as destructive. For, without their warheads, the ICBM's become research rockets which may someday guide man into space.

The 79 photographs, carefully selected from the files of the Armed Forces and private manufacturers, add enormously to the value of this timely book.

STRATEGIC INTELLIGENCE PRODUCTION—BASIC PRINCIPLES. By Brigadier General Washington Platt, United States Army Reserve, Retired. 302 Pages. Frederick A. Praeger, Inc., New York. \$4.00.

By LT COL CECIL C. HELENA, *Inf*

Here is the most down to earth development of the theory and practice of intelligence yet published. Also, General Platt's whimsical style makes it the most readable. By this work he has established himself as the current dean of intelligence writers.

Strategic Intelligence Production—Basic Principles is the third basic work on strategic intelligence in this decade. (See *Strategic Intelligence* by Sherman Kent, MR, Feb 1950, and *Strategic Intelligence and National Decisions* by Roger Hilsman, MR, Aug 1956.) It is more concrete in several of the areas discussed in Mr. Kent's *Strategic Intelligence*.

The reader who expects the usual platitudes and charts is due a pleasant surprise. The chapters on basic principles and the intelligence cycle are not a rehash; they are unique, obviously incorporating extensive practical experience and expert theoretical analysis. General Platt's nine principles of intelligence are derived from the nine US Army principles of war. The major phases of thought in the intelligence cycle the author characteristically labels "accumulation," "incubation," "illumination," and "verification."

In its theoretical development, all branches of intelligence are dealt with, not just strategic intelligence. It is a definitive study which ought to be mastered by every serious student of intelligence as a prerequisite to any study of current intelligence doctrine. It should be used as a text in intelligence schools. An understanding of this work will help all commanders, other staff officers, and supervisors in getting better intelligence from their organizations.

ALLIED WARTIME DIPLOMACY: A Pattern in Poland. By Edward J. Rozek. 481 Pages. John Wiley & Sons, Inc., New York. \$6.95.

By LT COL JAMES R. FRANCIS, *MSC*

Those who are naive when thinking of dealing with the Soviet Union are warned away. This is a moving, well-chronicled, and too little told epic of a "free nation" that was a pawn in the larger scheme of things.

The author draws upon authoritative sources, some sparsely used heretofore, for a documentation of as infamous and shameful a history as has appeared in the past 20 years.

The backdrop of history is painfully and unmistakably painted. The author even provides a sardonic or "tongue-in-cheek" other side—such as the Russian report of "the Special Commission Investigating the Circumstances of the Shooting of Polish Prisoners . . . in the Katyn Forest." The successful blocking tactics of Stalin, the unbending and unswerving requirements presented for continued Soviet support, and the actions taken to circumvent a lawful government with a Communist tool are presented as vivid historical reminders of the clever, unscrupulous, and *dedicated* realists with which the West is attempting to negotiate.

The book is a valuable and well-written addition to those areas concerning which the allies are so willing to forget. It should be mandatory reading by any student of political history and required study until the blazing lesson is understood clearly by all who would (or must) sit down and try to arrive at an understanding with Soviet arbitrators.

DIE DEUTSCHEN WAFFEN UND GEHEIMWAFFEN DES 2. Weltkrieges und ihre Weiterentwicklung. By Rudolf Lüsar. 239 Pages. J. F. Lehmanns Verlag, München, Germany.

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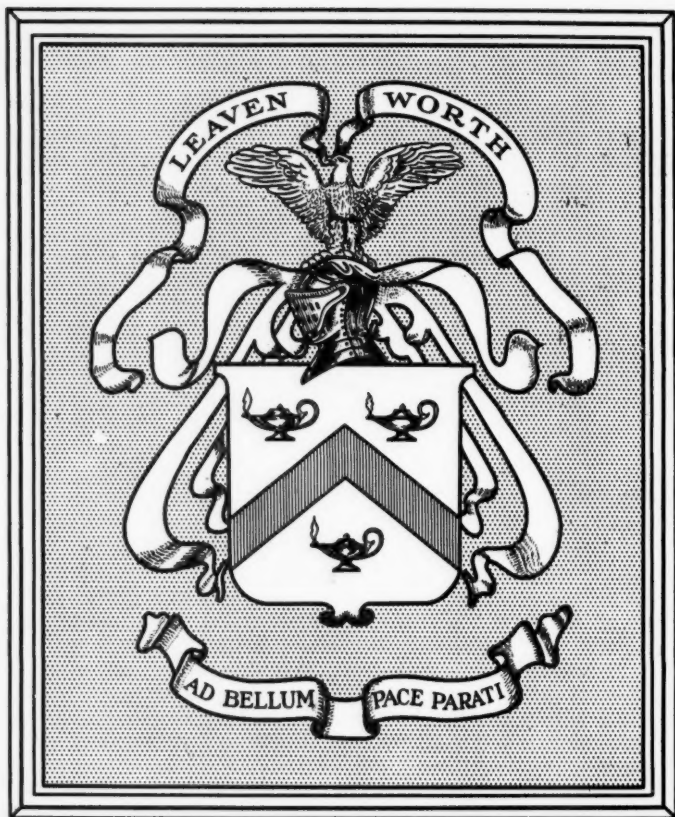
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